DOCUMENT RESUME

ED 288 745 SO 016 647


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TITLE The Productivity Factor. Comparing Japanese and American Modes of Production. A Resource for Teachers of Economics.

INSTITUTION Beaverton School District 48, Oreg.
SPONS AGENCY United States-Japan Foundation.
PUB DATE 84
NOTE 76p.
AVAILABLE FROM Paul Copley, Sunset High School, P.O. Box 200, Beaverton, OR 97075.
PUB TYPE Guides - Classroom Use - Guides (For Teachers) (052)

EDRS PRICE MF01/PC04 Plus Postage.
DESCRIPTORS *Comparative Analysis; Course Content; *Cross Cultural Studies; Curriculum Guides; Economic Factors; *Economics; *Economics Education; Evaluation Criteria; Instructional Materials; Performance Factors; Primary Sources; *Productivity; Resource Materials; Secondary Education; Social Studies
IDENTIFIERS *Japan



ABSTRACT

Focusing on the human element through a cross-cultural comparison of U.S. and Japanese modes of production, this resource guide features an assessment of the major factors that affect productivity performance. Each section contains a goal statement and an overview outline of the featured topics. The text includes primary sources, such as documents and quotations from authorities in the field of economics, and some sections provide discussion questions and related learning activities. The major topics include: (1) a definition of productivity; (2) a comparison of U.S. and Japanese economic performance; (3) the major and related factors that impact productivity; (4) the Japanese style of educating a productive workforce; and (5) the Japanese model of organizing the workplace. Strengths and weaknesses of both systems are described. Major economic terminology is highlighted within the text, with graphs and charts included. (JHP)



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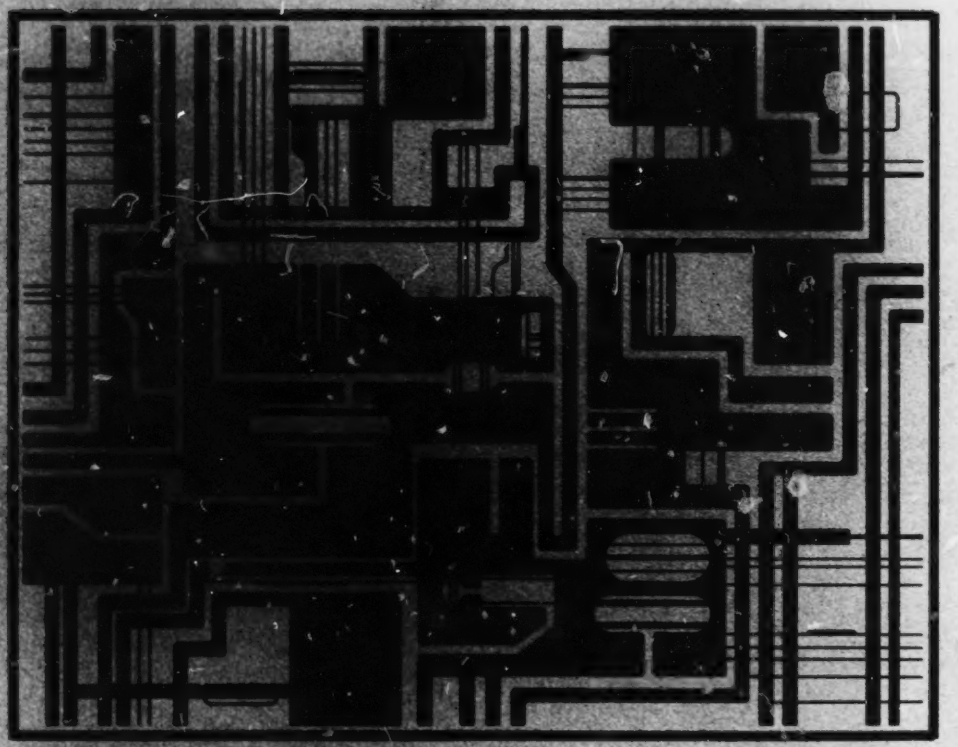

# THE PRODUCTIVITY FACTOR

## Comparing Japanese and American Modes of Production

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# THE PRODUCTIVITY FACTOR

## Comparing Japanese and American Modes of Production

A Resource for Teachers of Economics

By
Paul Copley
Sunset High School

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Beaverton, Oregon
Revised 1985

## ACKNOWLEDGEMENTS

I wish to thank the Beaverton School District and particularly Mr. Jim Carlile whose interest and support in research like this truly make him a "teacher's manager."

I also acknowledge my wife, Laurie, for doing "extra family duty" in order to see me through both the month-long Japan trip and the hours spent on this project.

And a special note of appreciation to the United States - Japan Foundation, whose grant to the U.S.- Japan Education Group made possible the trip to Japan for me and nine other American economics educators.

## PREFACE

In October of 1983 I was fortunate to be among 10 economics educators from U.S. high schools and universities to be selected to participate in a 3 week study tour of Japan's economic system. We received a very carefully organized itinerary which included lectures by corporate economists and government officials, as well as tours of some major industries.

As part of the selection process, the sponsor, **(The U.S. - Japan Education Group),** asked candidates to submit a curriculum proposal on some facet of the Japanese economy that would then be written and shared with interested colleagues by the summer of 1984. Based on that proposal, as well as my personal interest on the subject, I submit this research.

As recipients of the travel study fellowship, our friends in Japan have sent us an abundance of lucid and comprehensive information on Japan's current problems and, of course, their current successes. Besides those journals I have audio transcripts of speeches and interviews of economics leaders in Japan, as well as some video resources on the productivity issue specifically. Please write or call if you would like to use any of those resources.

* Additional copies of this resource book may be obtained by sending a letter of request to Paul Copley, Sunset High School, P. O. Box 200, Beaverton, Oregon 97075.

## HOW TO USE THIS RESOURCE

This resource focuses on the human element in a cross-cultural comparison of U.S./Japanese modes of production. It doubtless could apply to issues in global studies as well as economics. Topics that come to mind include the link between how cultures learn, how they think, and how they are used in the process of producing goods. Section #4 on the **"Japanese Mind"** encourages an exploration of this subject, as does the Section #5, Educating Human Capital.

Therefore, this resource can be used in fragments by extracting sections, a document, or a specific chart. Yet it presents a cohesive and comprehensive assessment of the major factors that affect productivity performance.

Each section presents:

a. An introduction which contains a brief goal statement and then an overview outline of the material data contained in the section.
b. The text is then divided into a narrative integrated with primary sources *(documents or quotes from the leading authorities in the area or charts and graphs measuring the data).* Each primary source is identified with a letter. These documents are listed with a brief synopsis directly following the title page of each section.
c. At the conclusion of some sections are some questions that can focus the reader as well as some suggested activities that could help deepen a student's understanding of the major points.

## STATEMENT OF PURPOSE

It may be helpful at the outset to establish the potential of this resource. It is designed for both teacher and for student use, and it may offer some areas of inquiry that texts and journals either only mention tacitly or not at all. For example, let's explore three potential **teaching scenarios** in order to more clearly define how this resource may integrate into your own curriculum.

**SCENARIO #1:** The goal of your unit is to define and establish a working understanding of the interrelationships between the **factors of production** *(land--natural resources, capital, management).* Assuming that students' know those definitions, it is still not clear to them how these factors can be manipulated in the process of production to create the highest possible standard of living for a country. The issue of **productivity** *(producing the most efficiently)* is discussed but more data is needed to make this relationship clear. This comparison between U.S. and Japanese modes of production is addressed in section #4. This would be a good resource for either teachers or students.

**SCENARIO #2:** You are teaching a unit on international trade and America's growing trade deficit must be explained. Students are aware of the wide distribution of foreign and particularly Japanese products in the U.S. markets. They want to know why there is a deficit, and why there is an attraction for Japanese products. After isolating the sources of the problem *(i.e., exchange rates, quotas, tariffs, subsidies, marketing strategies, consumption patterns)* the issue of "who makes a better product" is raised. The issue of producing a quality product at a cost figure that gives it "comparative advantage" on international markets must be explored. Working with this text in Section #2, International Comparisons of Economic Health, would bring substance to your unit.

**SCENARIO #3:** The goal of your unit is to explore "comparative economic systems." Much of the material available may be dated, and contain somewhat ideological discussions of capitalism vs. socialism. Yet you realize the world's economies are becoming exceptionally mixed, borrowing from command and market ideologies, depending on business cycles, and political crises. Comparative economic systems within certain specified factors however, could be an exceptionally interesting study for students. You could isolate, for example, worker-manager relations, modes of worker security, government's role in individual security, or government's role in investment strategies. All of these comparative factors accept the "mixed" nature of most economies. Even though they are non-ideological *(capitalism vs. socialism)* they still offer the interplay between economic, social, and political realities within a varying cultural milieux. This resource endeavors to provide data on all such comparative factors.

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# SECTION I
# INTRODUCING PRODUCTIVITY

**How does the issue of productivity impact our economic well-being?**

It can be be a shocking realization when a student of economics discovers that the U.S. standard of living, when measured by the per capita (per person) share of the GNP, ranks not # 1 but perhaps as low as tenth amongst the world of nations. Of these leading countries it is really difficult to compare which have a really superior standard of living. For example, because of population density most Japanese cannot afford a home or yard of a size that is common in the U.S. For one reason or another the U.S. ranks 19th in life expectancy for males and in infant mortality rate.* Despite the variances in a nation's priorities most economists agree that a per capita share of the GNP is the best available measurement of a standard of living. It stands to reason that when a country becomes more productive by producing more GNP per worker they can increase the per capita share of the GNP as well. Thus, economice well-being is increased because a country is now producing a greater product while distributing over the same population.

**Is productivity synonymous with economic growth?**

NO! Is it important to note that growth in productivity can create economic growth, or a larger GNP, but productivity growth is not the same as economic growth. A country's growth in GNP measures the **Ends**... All products, services - the output of an economy. Productivity measures the **Means**... that is how efficiently the nation produced that output.

**So what is productivity?**

The bottom line is efficiency. It is identical for a nation or a business. Productivity is interested in output per cost. How many units can be achieved for what factor cost. A nation, for example, can either produce more output (GNP) for the same factor costs or produce the same output for lower factor costs. In both cases a productivity gain is achieved because the output is achieved more efficiently! Furthermore, if a nation produces the same output for 5% less cost, everyone's purchasing power goes up by 5% because they now have to pay 5% less for the output they purchase.

Amongst all the factor costs (land, labor, capital, management, energy, etc.) economists generally measure productivity gains focusing on labor costs. If a company for example can increase the units of output per hour of work put in by an employee they can achieve more output for less wage or factor cost.

**How accurately can we measure productivity in an economy?**

As long as we stay in industries where output is sold, productivity is basically measurable. The productivity of an electronics firm's employees goes up if they are able to sell more circuits with fewer hours of work. The productivity of airline employees would go up if they could deliver more passenger miles with fewer hours work. However in areas of the economy where output is not directly sold, like government bureaucracy or in a modern high school the productivity question may be important to address yet impossible to accurately measure. How do we measure the productivity of a hospital nurse treating terminally ill cancer patients? Because of these problems our national productivity statistics can really only measure the private profit-making part of the economy. The problem is the U.S. productivity decline has been widespread from health care to manufacturing, in public and private sectors. In recent years some have tried to originate a way of measuring productivity in elusive economies like education with mixed success.

* Robert Heilbroner, Lester Thurow. **The Economic Problem**, 7th Ed., 1984. p.551.

**Why is it important to study U.S. productivity by comparing our economic performance with that of the Japanese?**

Simply, because it teaches us something about ourselves as it examines certain assumptions we have held as an economic society.

For example:

A key factor in productivity gains is the organization and motivation of labor. Because management has a number of optional choices as how to organize and motivate labor, the study of productivity can be a study in human relations. William G. Ouchi in his best selling book on Japanese/U.S. business, **Theory Z**, explains:

> It is a mistake...that our government appropriates hundreds of millions for researching new techniques in electrical engineering, physics and astronomy but almost no funds go to develop our understanding of how to manage and organize people at work. The problem of productivity will not be solved solely with increased investment into research and development. It will be remedied when we learn how to manage people in such a way that they work together more effectively.[1]

Productivity is not simply working harder but as the Japanese have said... **it's working smarter.** The key to working smarter may be how we organize the **"human factor in production."** Many U.S. managers have felt that something close to the threat of starvation or "the pink slip" is the key to the worker motivation. Many feel that anything that implies long-range security for the worker will create a lazy labor force. The Japanese prove that such assumptions are both ancient and erroneous... Workers work best when they are more secure about keeping their jobs! Thus by comparing the U.S. and Japan, we are comparing not just systems of production but cultural philosophies. By concentrating on the **"human factor"** this project attempts to explore these philosophical differences **as they impact economic performance.**

Finally, such an international comparison may help to answer some questions that frustrate many observers of U.S. economy. That is, why are the Japanese doing so well and why are we doing so poorly? Our economic performance in areas like trade, GNP growth are closely tied to how well we produce as a nation. Section II provides a brief exploration into the leading indicators of economic health, *(U.S. vs. Japan).*

## SECTION II

## Exploring U.S./Japan Economic Performance

**Goal:**

In this section we are interested in establishing some international comparison of economic performance for particularly the United States and Japan. It is important to overview a 20-year span of the following economic trends in order to grasp the reality of U.S. "economic health" particularly in comparison to its closest rival, Japan. An analysis of four sets of international economic comparisons will be used.

1) Trade (strength of export markets)
2) GNP - economic growth (national output rankings)
3) Productivity gains
4) Labor issues

Each of these charts or graphs will be introduced with some questions at the end of each grouping particularly to **focus** the reader's attention on the link between the various measurements.

### Trade

Do the Japanese make a better product for the price? In a growing product list Americans seem to think so. It is a fact of economic life that Japan's meteoric rise as a world exporter has challenged American dominance. Whether or not their productivity performance is the key factor or only a related factor among others cannot be evaluated here. Others include international exchange rates, government targeting export success with subsidies and protections, national consumption habits, and savings rates.

Yet we can see in CHART A some definite trends. Some observers argue that the U.S. is becoming a **trade colony** of Japan. One half of new autos sold in California in 1981 were imports *(80% Japanese)*. On west coast docks freighters load grapefruit and timber bound for Japan; from their holds they unload color TVs and calculators made in Japan. More than half of our exports to Japan consist of food, fuel or crude raw materials. More than two-thirds of our imports from that country are finished, high technology manufactured goods.

**CHART A • The U.S./Japan Trade Balance**
*(in billions of dollars)**

**What Japan buys from U.S. (1981)***
(85% of total)

7.7 B - raw materials - oil
6.4 B - foodstuffs
5.6 B - machinery, instruments (aircraft, office equipment)
2.7 B - chemicals

**What U.S. buys from Japan (1981)***
(71% of total)

11.2 B - autos
5.4 B - finished metal products
3.9 B - raw steel
1.9 B - scientific apparatus
1.7 B - tape recorders
1.4 B - motorcycles
1.1 B - radios

Source: Japan Times - 1982

Our relationship with Japan shows marked similarities to our trade role with England during the early period of our colonial history *(at least prior to the 1750's).* As England did more than 200 years ago, Japan is doing now:

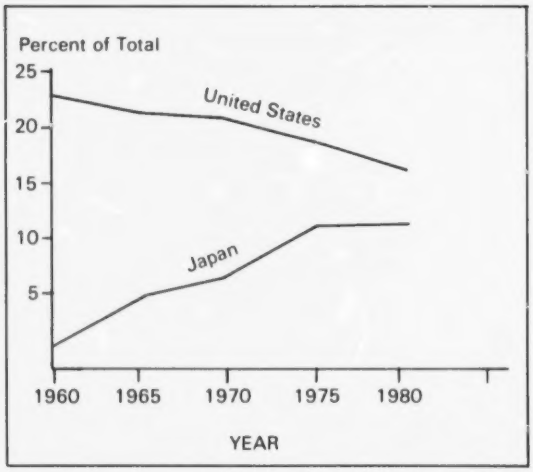
1) Using the U.S. as a source of raw materials
2) Using those raw materials, along with the latest manufacturing techniques *(many techniques imported also from the U.S.)* add value to those resources through the production of finished products
3) Selling those finished products to the American consumer market
4) Finally, Japan also uses the U.S. as a source of investment profit because of high interest rates.

In short, Japan is using the U.S. in a classic sense, a) as a source of raw materials, b) as a key export market, and c) as an investment opportunity. Within the framework of this relationship the U.S. is projecting a **trade deficit** with Japan for 1984 of approximately $30 billion.

Furthermore, of all the world's exporting *countries (see GRAPH B)* the percentage of the world's total exports coming from the United States is declining while Japan's share of world exports is growing.

* James Fallows, "American Industry What Ails It, How to Save It," **The Atlantic.** Oct 1981, p. 36

**GRAPH B • U.S./Japan Share of Total OEC Exports** *(Organization of Exporting Countries)*




Source: Data Resources Inc. 1980

## Focus on Trade

1. Define what is meant by a "trade colony." Why is the U.S. in a sense the colony of Japan?
2. What are the chief articles of trade between the U.S. and Japan?
3. Consider why exports are so important to a country's economy, particularly one like Japan's *(with limited natural resources).*
4. Can productivity gains play a part in expanding trade? If so, how?
5. What is the current trade deficit that the U.S. is predicting with Japan? Why might trade deficits be damaging to a country's economy? What may be some of the sources of ours?

### Output

**Changing Share of the World's Output, Economic Growth Performance**

It may be helpful to look at an American/Japanese performance from the point of view of the most quoted measure of economic health - GNP *(output)* and GNP growth. Economists warn that a rising GNP does not automatically equal economic well-being.

It ignores, for instance, questions as to how the GNP is distributed, or the possibility that an output increase was coupled with a severe drop in productivity *(however, in fact the opposite is usually the case).* Nevertheless, as a gross measure output (GNP) growth is exceptionally important. In CHART C we see that for a 30 year span (1950-1980) the U.S. remained #1 in GNP yet its chief rivals, Japan and West Germany, gained rapidly during the postwar economic boom. Measure their GNP as a percent of our own (*i.e., Japan, 1980 - nearly 40% of U.S. ...up from 4.3% of U.S. in 1950*).

**CHART C • GNP Rankings (Total Output) with Percent of U.S. Total**
*(in billions/trillions)*

| Year | GNP | Rank | GNP | % of U.S. | GNP | % of U.S. | GNP | % of U.S. |
|---|---|---|---|---|---|---|---|---|
| 1950 | 328B- | 1 | 14B | 4.3 | 28B | 8.7 | 35B | 10.7 |
| 1960 | 503B- | 1 | 39B | 7.8 | 70B | 14.0 | 60B | 11.9 |
| 1970 | 992B- | 1 | 203B | 20.5 | 184B | 18.6 | 145B | 14.7 |
| 1975 | 1.5T- | 1 | 498B | 32.2 | 418B | 27.0 | 339B | 21.9 |
| 1980 | 2.6T- | 1 | 1T | 39.5 | 816B | 31.5 | 657B | 19.5 |
| | U.S. | | JAPAN | | WEST GERMANY | | FRANCE | |

Source: Bank of Japan 1983

Another measurement of output is found in comparing each country's evolving share of the world's GNP over decades 1950-1978 *(See CHART D)*. This measure demonstrates vividly the relationship between an 18% decline of the U.S. share with an 8.5% increase in the Japanese share.

**CHART D • Share of the World Total GNP**

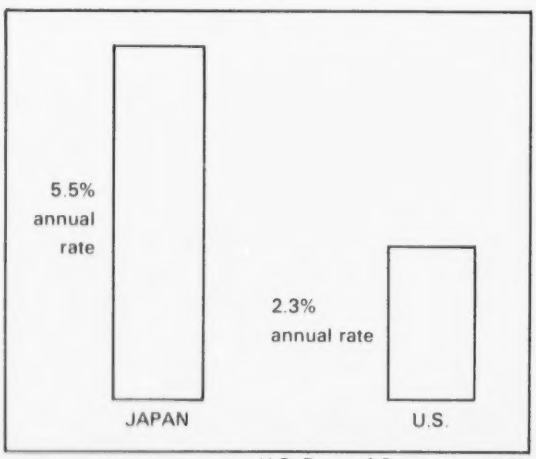
| | 1950 | 1960 | 1970 | 1978 |
|---|---|---|---|---|
| Japan | 1.5% | 2.9% | 6.2% | 10.0% |
| West Germany | 3.6% | 4.8 | 5.8 | 6.6 |
| *LDC/S | 9.1% | 9.5 | 10.0 | 15.1 |
| EEC | 16.4% | 17.8 | 18.7 | 20.2 |
| France | 5.9% | 6.8 | 7.2 | 7.7 |
| UK | 5.0% | 4.8 | 3.6 | 3.2 |
| U.S. | 39.3% | 33.9 | 30.1 | 21.8 |

U.S. Chamber of Commerce 1980

If all countries' economies are growing then perhaps the relative shares are incidental. In fact, it is to the U.S. benefit to have L.D.C.'s particularly obtain greater share. This is true not only for political stability but as a source for American Manufactured products. In a growing finite world with limited resources Japan has demonstrated a rapid gain in percentage of the world's output. That means it demands a greater percentage of the world's resources to produce that GNP. Thus, Japan and the U.S. are not only chief rivals in trade but Japan is a chief rival of the U.S. for the world's resources needed for that growing output.

Finally, in CHART E we can see a direct comparison of U.S. GNP growth over a 12 year period with that of Japan. The message is explicit. In a similar international economic environment *(recessions, oil shocks, etc.)* Japan's economy outperformed the U.S. by more than doubling our growth rate.

**CHART E • Real Economic Growth (GNP Increase) 1970-1982**




U.S. Dept. of Commerce 1980

**Focus on Output**

1. Why is GNP used so often as a measure of economic health?
2. Identify the relative positions of the U.S. and Japan in size of GNP output 1950-1980. What does the 30 year trend suggest?
3. What are the trends in U.S. and Japan's share of the world output? What are some consequences of this?
4. What is the GNP growth record of U.S vs. Japan over the last 12 year span?

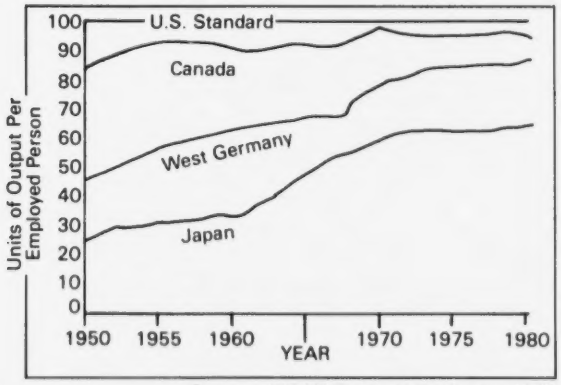
* Lower Developed Countries

## Productivity Performance

In this section we explore the relative positions of U.S. and Japan by measuring how effectively did they produce that GNP previously analyzed? Remember productivity is a measure of how efficiently a country manages its factors of production to produce its output *(See SECTION #1)*. In GRAPH F we see that if our chief competitors were compared directly with an unchanging American standard of productivity performance, measured by units of output per employed worker, the U.S. remains the most efficient producer in the world. Yet in the last 30 years our competitors are closing the gap. Also, this graph lumps all economies together. It does not adequately point out that the U.S. lead may be maintained in say agriculture, yet our national productivity in the product manufacturing of autos or steel, for example, is declining.

This decline in U.S. manufacturing productivity is no secret. It has a great deal to do, of course, with the comparative advantage of Japanese products in international markets. *(See GROUP #1 - TRADE)*

**GRAPH F • United States Still Ahead in National Productivity**




Source: JAPAN Productivity Center 1983

In CHART G we see the relative performance of seven countries based on an average annual increase in productivity. Over a 20 year period what were the "relative increases of productivity" of these countries? Looking at the trends, the U.S. in comparison to Japan has performed abysmally. We will need to define those sources carefully in order to judge fairly what the U.S. can learn from Japan's recent success.

**CHART G • Productivity Comparisons (Percent Annual Increase)**

| | | | |
|---|---|---|---|
| JAPAN | 8.5 | 10.0 | 4.2 |
| WEST GERMANY | 5.8 | 5.0 | 5.0 |
| ITALY | 7.3 | 6.6 | 3.3 |
| FRANCE | 5.4 | 5.7 | 5.1 |
| CANADA | 4.3 | 4.9 | 2.3 |
| UNITED KINGDOM | 4.1 | 3.8 | 0.6 |
| UNITED STATES | 4.2 | 2.9 | 2.1 |
| Period | 1960 - 1966 | 1967-73 | 1973-79 |

U.S. Bureau of Labor Statistics 1980

### Focusing on Productivity

1. What is the relative position of the U.S in comparison to its chief rivals in the area of national productivity?
2. Over a 20 year span what have been some trends in productivity gains *(U.S vs. Japan)*?
3. What impact does U.S./Japan performance in the area of productivity have on U.S./Japan performance in:
   a. Trade - comparative advantage of exports
   b. GNP output growth

### Labor Inputs - International Comparisons

Because much of this exploration will concentrate upon the "human factor" in production it may be helpful to establish some measures of trends within the workforces of the U.S. and Japan.

TABLE H illustrates the most recent performance of leading mixed market economies in the area of unemployment. With all countries experiencing similar cycles it is clear that Japan once again stands out with a consistently lower rate than the U.S. A growing economy *(GNP growth)* certainly enhances full employment. Yet, observers of economic history could argue quite successfully that large gains in productivity *(output per labor input)* means loss of jobs. Japan's near full-employment performance confirms the principle that economic growth means employment health *(in fact, in many cases labor is a scarce factor in Japan)*. On the other hand, Japan's experience contradicts the notion that rapid gains in productivity mean rapid loss of jobs. In SECTION #4 we will explore the Japanese lifetime employment system. If they defined employment the way we do in the U.S. their performance may not look quite as superior.

**TABLE H • Unemployment (Annual Rates)**

| | 1978 | 1979 | 1980 | 1981 | 1982 | 1983 |
|---|---|---|---|---|---|---|
| JAPAN | 2.2 | 2.1 | 2.0 | 2.2 | 2.4 | 2.6 |
| U.S | 6.1 | 5.8 | 7.1 | 7.6 | 10 8 | 9.5 |
| W. GERMANY | 3.9 | 3.4 | 3.4 | 4.8 | 8.4 | 8.1 |
| U.K. | 5.7 | 5.3 | 6.9 | 10.6 | 12.3 | 11.8 |
| FRANCE | 5.2 | 6.0 | 6.4 | 7.8 | 9.4 | 8.4 |

Bank of Japan 1983

CHART I provides another perspective on unemployment, from the point of view of national labor inputs *(percentage of increase in the labor force).* If the U.S. has more than doubled the number of new workers into the workforce than Japan then the impact on both full employment and productivity will indeed be profound. Both countries have reached near zero birth rate growth. However, the U.S. has seen the entry of additional workers, particularly women and immigrants, into the workforce. Japan has recently controlled both female workers *(See SECTION #4)* and immigration in such a way to maintain stable labor input *(if not scarcity).* If productivity is a measure of output per unit of labor, the national policy of controlling labor inputs must be taken into account. This factor is often ignored when comparing the two countries.

**CHART I • Total Percent Increase in the Labor Force 1970-1980**

| | |
|---|---|
| 1. UNITED STATES | 19% |
| 2. JAPAN | 8% |
| 3. FRANCE | 9% |
| 4. UNITED KINGDOM | 5% |
| 5. ITALY | 5% |
| 6. WEST GERMANY | 4% |

Organization for Econ. Cooperation and Development 1980

The impact of labor input growth is illustrated in Chart J. It illustrates that for each worker employed 1963-1979 the total annual average growth in the economy. While the U.S. experienced a GNP growth rate of 3.5% from 1963-1979 *(yearly average)* because of the increase of new workers the share of the GNP per worker was less *(1.8% yearly average).* In Japan, for example, with a more moderate growth rate in the workforce, the average yearly growth from 1963-1979 per worker was about 10%.

**CHART J • GNP Growth Rate Per Employed Worker 1963-1979**

| | |
|---|---|
| 1. JAPAN | 10% |
| 2. WEST GERMANY | 8% |
| 3. FRANCE | 7.5% |
| 4. ITALY | 7% |
| 5. UNITED KINGDOM | 3.5% |
| 6. UNITED STATES | 1.8% |

Source: Organization for Economic Cooperation and Development 1980

### Focusing on Labor Inputs

1. What is the recent unemployment record of the U.S. vs. Japan?
2. What impact do economic growth and productivity gains have on unemployment?
3. Why must the labor input question be considered to create a correct perspective on productivity and on economic growth *(GNP share per worker)*?
4. Make a comparison between the U.S. and Japan in the area of labor input. What trend do you see?

## SECTION III

## Exploring the Major Factors That Impact Productivity

**Goals:**

1. To discover what are the major factors that impact productivity.
2. To know how each of these seven identifiable factors interrelate in order to impact a countries performance.
3. Understand which factors are most significant and which can be consciously manipulated.

We have defined our terms and laid the foundation that productivity is an important issue to explore. We have analyzed America's and Japan's relative position on productivity as well as other indicators of economic well-being. In this section we will identify* just what leading economists in their research have found to be the major factors that affect a nation's productivity performance *(see note*)*. We should then find how these factors interrelate and which may be most subject to change or manipulation to increase performance. Thus, the following are the seven interrelated factors most analysts mention.

A. The "Human Factor".

1. Process technology innovations and learning curves.
2. Finding the correct workforce incentives.
3. Human Capital (educating a workforce).
4. Long-range management planning

B. Significant Related Factors.

5. Investment strategy.
6. Nature of government intervention.
7. Consumption patterns.

All of these factors are profoundly interrelated. For example, inadequate investment will deter both new technology research, and the maintenance of even existing equipment. As one writer put it "what worker will be more productive at cutting wood, the one with the chain saw or the one with the handsaw?" Each factor impacts others. Nevertheless, we briefly isolate the seven factors to clarify them.

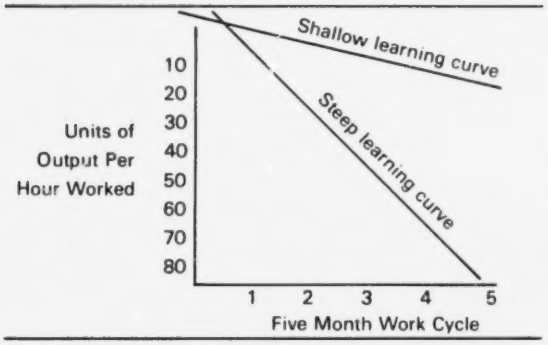
### THE HUMAN FACTOR

#### 1. Process Innovations and Learning Curves and Capital Investment

If productivity is to be discussed in such a way as to effect change, we probably should begin with the process of production itself. Many U.S. economists have argued that the lack of investment is the problem. It is said that the Japanese invest more than we do, and that our tax structure does not encourage investment. The problem may not be that simple. Federal economic strategy 1980-84 *(Reagonomics)* was designed in part to increase investment in order to accelerate productivity. Yet because of factors such as large government deficits, increased investment towards improving our productive system has not taken place. It is very possible that this problem of the lack of investment is tied to what economists call "learning curves". For example, during W.W. II "liberty ships", and B-52's were mass produced. Over the course of months (1942-1945) the man hours necessary to build those weapons fell rapidly as more and more were built *(classic Economies of Scale)*. Capital equipment did not change much but productivity rose considerably. Similarly in civilian production, new plant labor costs drop sharply over a few years once methods and equipment use have stabilized. Thus, the profitability of investments in such operations many times depends on the perceived benefits of these investments as shown by the "learning curve"[2] (see GRAPH K).

* Professor **Lester Thurow of M.I.T** has done some extensive research on productivity particularly in our relationship to Japan. He is both adept at discussing the subject from a social perspective *(i.e. labor-management relations)*, as well as applying econometric analysis *(statistical probability)* to his lucid prognostications. Thus, we shall rely quite heavily on his comments contained in **The Zero Sum Society**, and **The Economic Problem**, the latter a text Thurow co-authored with Robert Heilbroner.

**GRAPH K**




Often multinational corporations explain that they can build the same plant, with the same capital equipment in various countries with varying productivity results. Why - because learning curves vary. That is where the human factor comes into play. This may offer some insight into the Japanese productivity successes vs. the U.S.

The learning curve is related to how workers acquire on-the-job skills and team productivity. In the **process of production** *(process innovation)* workers learn and improve their individual job skills and learn to work together as a team. New workers are inferior to those that have learned by being on the job over some period of time even if their education and skills are equal. As the process is developed, new and better ways of building the product are found. Each innovation in the production process may be small, but the cumulative effect of many small improvements is often very large.[3]

As a plant goes down its learning curve productivity rises without mechanization or capital investment. The labor costs at the bottom are a fraction of what they were at the top. The process is not automatic. It depends on the quality of management and a cooperative workforce.[4] If workers are unhappy it can stifle the learning process. Incompetent managers will miss labor saving procedures. It is always important to note that administering **technology is an intellectual process not necessaraily the automatic replacing of human action by a machine** *(mechanization).* Managers need to be aware of how technology can best save wasted energy *(human and machine),* and how to avoid workplace attitude that stifles workers' learning. How can workers **replace their own labor**... and become more efficient?

Rigid work rules can lock workers into old methods and disallow the "moving down" the learning curve. Often the British, bring a strict union list of agreements governing each laborer's actions, the specific nature of his tasks, the exact hours to be worked, and for-what-pay classification. Before opening a plant these types of stringent classifications disallow the creation of an interdependence between capital and labor that is not recognized in the simple cry to raise investment.[5] If the Japanese are able to generate a steeper learning curve than Americans, then the same steel mill for example may be a good investment in Japan but a poor investment in the U.S. To raise the profitabilty of that investment depends on a cooperative workforce and a high degree of skill acquisition by the the workforce. A federal strategy to stimulate investment by tax reduction on capital gains may not achieve the desired end. There will be no productivity gain unless accompanied by worker skill acquisition and workforce cooperation. The following is an illustration of the relationship between investment profitability and the factors of productivity that can create it.

**CHART L • Learning Curves and Investment**

*Investment of Capital $
Creates New or Improved Capital Goods
Creates a More Productive Workforce
Need Incentive of Profit Horizons to Accept Risk
Steep Learning Curves Bring Workers into "Sinc" with Capital Goods
Profit Requires Lowering Input Costs
Lowering Costs Requires Steep Learning Curves That Cut Costs
Steep Learning Curves Depend on a Cooperative Workforce & Rapid Skill Acquisition

## 2. Labor Incentives - Process Innovations and Learning Curves

Much of what the Japanese have taught us these past few years relates to the human side of the productivity question. That is: how do the Japanese produce such a productive worker? What can we learn from their system of cultural and structural incentives? The Japanese are not immune to individual incentives. The Japanese worker may think differently than an American worker because of different structural guidelines that govern his or her behavior. For example, Americans have always assumed that large income differences motivate poorer wage earners to work harder for higher productivity. We have believed that such **insecurity** is essential to maximize productivity. We have believed that such insecurity *(potential loss of employment)* keeps the individual keen, working scared, and gives the company an out when demand slackens by allowing laborers to be given a pink slip.

These are assumptions that the Japanese success contradicts. The criteria for the measurement of a productive worker is not whether or not they work hard, but whether or not they **work smart.**That is: do workers acclerate learning curves or don't they? The Japanese have taught us that working smart and accelerating learning curves happens in a system that emphasizes **security,** not insecurity.

Furthermore, Japanese wage differences are small. Compensation is based on seniority only and moving up the seniority system is often long and grueling. However, in a system based on lifetime employment and seniority wages the Japanese believe they have invented a way to get workers to accept mechanization or technical streamlining in production because they know it won't affect their employment or wage. With the typical industrial worker getting 50% of their wage in twice yearly bonuses based on profit, a steep learning curve is of direct concern to the worker. He or she directly profits from productivity. SECTION #4, the **"Japanese Model"** is devoted to exploring the various facets of structural incentives within the context of the **"Japanese Mind"**, or the Japanese cultural way of thinking.

## 3. Human Capital and Learning Curves

By "human capital" we mean the skills and knowledge possessed by the workforce. Even though the measurement of human capital is fraught with difficulties, we cannot ignore its vital role in labor productivity. If productivity depends on education, then it is assumed that a more educated workforce is a more efficient workforce. America spends as much, or a little more of the percentage of GNP on education (6%) than does Japan. The issue however is **one of the quality of education and just how that comes to impact the worker as a learner in the process of production.** This is an issue we explore in SECTION #5 and one that gets down to two varied approaches to learning and the process of schooling... *(U.S. and Japan).*

## 4. Long-range, Short-range Management Planning and Learning Curves

It is argued that American managers in contrast to Japanese managers take a very short-term view of success within the process of production. It is argued that American managers have been unable to generate an environment where their labor force can take a direct interest in raising productivity, working down a learning curve. Often, it is argued that the immediate need to return a profit makes process innovations difficult. In contrast, Japanese managers have been praised for their patience, for their willingness to look over the long-term. It is alleged that the typical Japanese firm does not become profitable until 15-18 years after it begins production. Why the difference?

We will explore in SECTION #4 documents what directly tie management motives to debt financing. Managers in America are rewarded with bonuses by virtue of quarterly profit performance. With American firms relying on equity *(stock)* finance, the time commitment of investors is so short and the loyalty of their capital so unsure that managers are obliged to show day-by-day that the company will return a profit on investment. In Japan where the good majority of finance comes through the banking sector with capital commitments over often 20-30 years, managers' incentives are over a longer time horizon of profitability. This impacts the capital goods investment strategy.

It impacts commitment to workplace job training and the willingness to retain workers during slumps. These are all key factors in maintaining a productive workplace and cost more in the short-run. In SECTION #4A and #4C, particularly U.S./Japan management serves as an interesting comparative study. One must keep in mind that modes of finance may change the human factor, i.e. the managerial response. The economic lesson is clear: change the incentive structure and change behavior!

**5. Investment Strategy: Process Innovations or New Product Research and Development? *** (see note)

To understand process innovations it may be helpful to first clarify the difference between research and development and new product R/D. To become more productive we may need to change our bias in the U.S. away from an emphasis on new product innovations toward finding out new and better ways to make old products *(process R/D)*. There are two reasons why our bias has been toward new product research. First, it has been more glamorous. Scientific, engineering minds are attuned to new revolutionary products. Secondly, there is a difficulty in funding process R/D.

Production is almost always in the private sector. When government funds finance the research on new products in universities, no one can predict if success is achieved. In process R/D however, the potential gainers are clearly identified... firm or firms that now make the product. Thus, in the civilian economy *(leaving out public goods like weapon systems)*, tax money to fund process research would be taken from one individual to give to another.[6]

Yet process R/D is essential because it is necessary to advance quickly down the learning curve. Process innovations have the capacity to accrue productivity gains that far exceed new product R/D. This is simply because it impacts more products *(existing products)* than does concentration on purely new products. Furthermore, the learning curve lies in the private sector. While it would seem that private incentives exist to finance such process innovations, the fact is that disincentives are stronger. That is why government steps in to do it.

Two final comments on defining new product R/D as a key to accelerating productivity: pro-business advocates of a larger scale partnership between industry and research based academia are fond of bemoaning the decline in our country's R/D expenditures as a percent of the GNP. When one looks at the trend one finds that R/D expenditures began to decline from 3% of GNP in 1970 to 2% by 1978. However, our productivity decline began in 1965. Secondly: when one matches investment in plant equipment and productivity gain we do not find much of a cause-effect relationship.

**CHART M • Investment to Productivity Gain Comparison**

| Plant & Equipment Investment | Productivity Gain |
|---|---|
| 1948-1965 9.5% of GNP | 3.2% average |
| 1965-1975 10.2% of GNP | 2.3% average |
| 1975-1980 10.1% of GNP | 1.1% average |

This does not mean that an increase of R/D expenditures of a greater investment into capital goods would not help to make us more productive. The points are that a) simply increasing investment ignores other structural problems *(i.e. market shifts, or labor management disincentives to be productive)* and b) increasing investment is what Thurow calls another "zero-sum" solution. If we were to raise investment from 10% of GNP to 20% of GNP for example *(the level of Japan)*, who would be willing to accept 10% less GNP consumption? It would not be so hard to do. Simply decreasing taxes on savers and increasing taxes on consumers would achieve the result. However, in the process one also achieves something else, a substantial shift in income distribution in favor of those that have the ability to save *(higher income brackets)* see Chart N. In order to raise savings by 5% *(for example from 3 to 8% of the GNP)* one either has to do #1 or #2.

* **"Technology"** is a term that can have a number of meanings. The process of becoming more of a technological society implies: a) mechanization b) also the capacity to educate those that must interface with new machines c) investments into **new** products *(more sophisticated)* d) investments into improving the process of making old products.

#1 Lower consumption habits of 60% of the population so as to increase their savings from 0% upward.
#2 Transfer 188 billion from the bottom 60% to the 5% of the income earners where the savings rate is 50%. In doing that you lower the bottom 60% standard of living by 46% and raise to top 46%. *(even for Reagan this may be a "political risk").*[8]

**CHART N ●**

The economic message is clear... all choices are zero-sum choices, at least in the short-run. Someone wins, someone loses, with gains or losses measured in income appreciation or depreciation.

### 6. Nature of Government Intervention - Japan vs. the U.S.

Japan for example has shown much success in the kind of process innovations we have identified previously. Japan is not a leader in new products, but they have been a leader in better processes for producing old products. Why is this true? It is because of the absence of a sharp dividing line between the public and the private, and a willingness to engage in process R/D. They have been willing to risk the inevitability of taking revenue away from some Japanese and giving it to others.

This practice, often referred to as "Japan Inc." speaks of the historic practice of the government selecting which product areas, and which firms upon which to concentrate the heaviest emphasis. This subject, exploring the government's proper relationship with business, has been termed in this country "Industrial Policy". It is assumed that Japan has one, a friendly one, and the U.S. does not. Or if the U.S. does, it is a government policy unfriendly to business growth and well-being. Some have argued that in the U.S., government only enters into the picture on behalf of business when an industry is so large *(Chrysler),* that it cannot be allowed to fail.

If we tend to view a government managed policy in the U.S. as adopting some of "Japan Inc." characteristics in order to accelerate productivity we must be careful to consider whether or not Japan's government is playing the role of partner or leader that it once did perhaps in the 1960s. In that decade the government *(M.I.T.I-Ministry of Trade and Industry)* did choose certain industries to target for success. They gave tax breaks, no or low interest loans, R/D subsidies and blanket protection from outside competition. Yet paradoxically according to Thurow, as we evaluate potential U.S. government "industrial policy that would accelerate productivity nation-wide", the key may be in the government's leadership in the area of DISINVESTMENT. Economist Thurow makes a case that eliminating low productivity firms raises productivity as much as opening new high productivity plants. Doing so is cheaper since large investments are not necessary to close a low productivity plant. Doing so make more productive factors *(workers, capital, land)* available for high productivity firms. Thus, "the essence of investment is disinvestment"![9]

Dying, low productivity industries are often located in areas where demand is stagnant or decreasing. These dying industries:

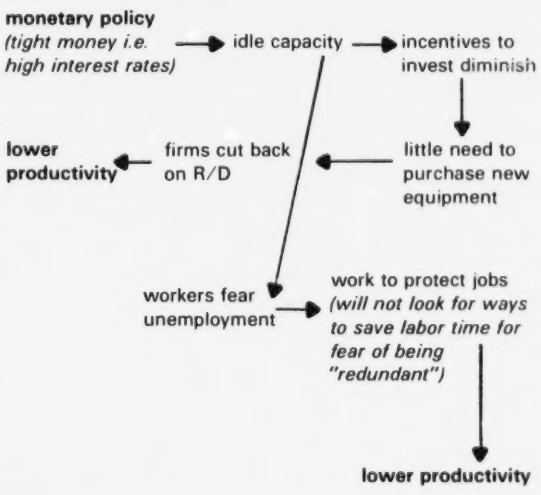
a) Do not attract bright managers. While perpetuating fear, managers find that responsibility means having to fire someone or not making decisions about where to make new exciting investments.
b) Everyone is out to protect themselves. Any technological gain would be seen by workers as resulting in more layoffs.

The phenomena is true everywhere from railroads to schools... as output drops, efficiency falls and vice versa. This is true because everyone in a declining industry will marshall forces to protect their own income even if it means a loss in productivity. In 1980-1982 we had our factories at 68% capacity. Even though unemployment in manufacturing increased during the slowdown recession we did not see managers' or workers' incomes decrease proportionately. As a result we became less productive in those areas. We got less output per man hour *(whether laborer or manager)* of cost.

Government policy accelerating disinvestment in what some call our "sunset" industries could be handled simply by either ending tax dollar subsidies, trade protections or favorable regulations. The one provision that must be considered is how to find a way to provide for the economic security of individuals without offering the same security to failing institutions. This is a key problem for an "industry policy". It is critical when expecting the U.S. to move over a period of time to more productive and competitive "sunrise" industries. It is easier to shift investment in a market economy than to shift people.

It is often over looked that there exists a connective relationship between economic growth and productivity growth. If the government pursues a "fiscal" and a "monetary" policy for example, that has as its by-product hyper-inflation (1974-1980) such a policy creates uncertainty among investors and limits long range financing. It also creates a response from labor and labor unions of indexing wages to a cost of living (COL). This is a very retarding factor to labor productivity gains. Conversely, productivity growth will decrease with economic growth if government pursues a policy that has as its end the lowering of inflation, by slowing the economy *(1982— 32% of our industrial capacity lay idle).* There exists a direct link between productivity loss and policies that tighten money and create idle capacity as an anit-inflation measure.

**CHART O • The Link Between Tight Money and Productivity Loss.**


monetary policy
(tight money i.e. high interest rates)
idle capacity
incentives to invest diminish
little need to purchase new equipment
firms cut back on R/D
lower productivity
workers fear unemployment
work to protect jobs (will not look for ways to save labor time for fear of being "redundant")
lower productivity

**7. Consumption Patterns and Productivity**

A final area to consider is the link between productivity and consumption patterns in the market. The greatest reason for our decline in productivity may be found in our consumption patterns and the way we mix goods and services. Who wants four refrigerators at the expense of a 75% cut in health care? There are limits on our ability to respond to such logical market shifts. These are measures of a post-industrial society, and they must remain as a serious consideration as we analyze potential responses to the Japanese challenge.

If a country is building from wartime devastation it will rebuild new plants *(Japan and Germany 1945-1960).* They use new knowledge, "state of the art" knowledge so to speak.

New knowledge becomes important in any economy only when costs have been reduced to the point that the information can produce goods or services which we want at a price we can afford to pay. A road, for example, must be laid out by scientific, engineering R/D, but economic feasibility must be achieved. At this point new knowledge starts to impact productivity. We build the road and start to use the new processes that produce better or cheaper products. Our standard of living, in the process, goes up. Our economy becomes in a sense, a mix of new high productivity activities, and old low productivity products. Productivity then depends on how many old products using old techniques mix with new products with new techniques. According to an econometric scale, America in 1977 had productivities on a scale of 1-5. That is, some products were being produced 5 times more efficiently than others. Productivity depends on the relationship between discarding the low *(with a rating of 1),* and moving to the high *(with a rating of 5).*[10] Of Japanese and West German manufacturing plants built after 1945, a large proportion were located nearer to the best practical frontier *(those rated a 5 or close).* Even though the plants were no better than ours built at the same time, it still gave them a better productivity performance, because of those plants' productivity frontier relative to the rest of their economy.

Considering these frontiers, a country's mix of products is exceptionally important when it comes to measuring one country against another. Consider America's mix.

1945-1972:

The mix of products demanded enhances productivity. Agriculture with a productivity 60% below the national average lost in these years 500 million man hours per year. Thus, every worker who left agriculture and entered the urban economy meant a sharp rise in national productivity. There were millions of such workers.

1972 - Present:

In 1972 this transition essentially ended. Since 1972 quite the reversal is occuring. Another low productivity sector *(services)* is gathering positive rather than negative momentum. 1965-1972 services added 30% of all new man-hours since 1972. Service sector productivity is 40% below the national average so every worker entering the service sector means shifts toward lower productivity. Now 68% of American workers are service sector workers.

The following chart illustrates the mix of goods and services in our present economy.

**CHART P • Mix of Goods and Services**

**1977 National Average -**
**Man Hours of Work Produced Value $8.09**

| | |
|---|---|
| Services | $4.92 value per hour |
| Finance | $23.51 value per hour |
| Manufacturing | $8.42 value per hour |

| Highest Productivity Occupational Areas | Lowest |
|---|---|
| Finance | Services |
| Wholesale Trade | Retail Trade |
| Utilities | Construction |
| Communication | Agriculture[11] |
| Mining | |

It is obvious that a nation's productivity increases substantially when an economy is in a stage of "becoming". Capital-intensive, mechanization-intensive transitions increase the productivity of labor, and thus a country's productivity rating. Japan between 1946 and 1978 made rapid surges in manufacturing and finance during a time America was growing mostly in services. Almost one-half of our extra service workers are in health-care. If better health care is what we want then we are purchasing a very low productivity service. There is a limit to how many banks, computers, T.V.'s, and autos that can be consumed. Eleven dollar calculators cost less than many haircuts which is perhaps a statement about the power of technology and learning curves. Yet such durables have limited demand and hair, on most people anyway, continues to grow.

## Exploring Section # 3

1. Define the following terms— particularly in relation to productivity.

   A. Process Innovations
   B. Human Capital
   C. Market Demand
   D. Research and Development (R/D)
   E. "Japan Inc."
   F. Investment, Disinvestment
   G. Learning Curves
   H. Debt vs. Equity Financing
   I. Product "Mix"
   J. Idle Capacity
   K. Zero-Sum Solutions

2. What factors tend to steepen learning curves and thus accelerate productivity? Conversely, what factors would tend to retard the steepness of the curve.

3. Why is it that a simple investment increase may not be the answer to productivity increases?

4. Explain the relationship between the incentive to commit investment capital *(profitability)*, steep learning curves, a cooperative workforce, and productivity gains *(See "Learning Curves and Investment, p. 9).*

5. Why is a correct assessment of labor incentives so important when one assesses the sources of productivity performance?

6. What is the link between "human capital" and productivity?

7. What U.S management assumptions about labor incentives creating peak work performance does the Japanese success call into question?

8. Why does U.S. management tend to be short-term oriented compared to the long-term approach of the Japanese?

9. What is the difference between process innovation and new product R/D? Why is new product R/D more attractive to the U.S scientific community? Why on the other hand is process innovation more important for productivity gains?

10. What are some obstacles to be overcome in the effort to become more independent as a nation at process innovations?

11. What is the direct cause and effect relationship between plant and equipment investment?

12. Increasing investment by increasing the savings rate presents some "Zero-Sum" dilemmas. Why?

13. What was the unique role of MITI *(The Ministry of Trade and Industry)* in Japan?

14. Why may the essence of investment be disinvestment? What is the government's role here?

15. Explain the direct link between low productivity firms and firms where market demand is weakening and thus output is falling.

16. If the government is to produce an industrial policy accelerating disinvestment of "sunset" industries, what must be a central provision if the government is not to be accused of perpetuating human misery?

17. Explain the link between a tight monetary policy *(i.e., Anti-inflationary Policy)* and productivity?

18. How is the variety of products *(goods, services)* that we choose to consume in the U.S. an important factor determining our rate of productivity growth?

## SECTION IV A, B, C, D, E

### The Japanese Model of Organizing the Workplace

**Exploring the "Human Factor" in the Productivity Question**

In this section:

A. "The Japanese Mind": Matching Cultural Values with Structural Modes of Behavior

B. The Japanese Model: Organizing the Human Factor in the workplace

C. The Quality Control Circle

D. A Counter Review of the Japanese Model: Some Human "Side Effects" of the Japanese Model

E. Managing the Workplace U.S. Style: Problems, Promises

**Section IV - Introduction**

In Section #3 we outlined and discussed briefly the seven major factors involved in accelerating gains. Now we can explore how Japan and the U.S. are responding to the challenge. Within Section #4 we will integrate three of the four factors that make up the "human factor" in the process of producing.

*Workforce incentives
*Management planning
*Process innovations, learning curves
*(Educating for human capital will be explored in Section #5)

The goal here is to explore the "Japanese Model" of organizing the workplace in such a way that allows us to see: 1) the Japanese cultural philosophy behind motivating and organizing individuals 2) establish a knowledge of the dominant structure within the Japanese industrial company. Then, 3) we can explore these philosophical and structural guidelines within the context of dominant factors of productivity discussed in Section #3.

Finally, we can critically review the model in order to discover how the model impacts the U.S. and what we could learn and integrate successfully into our own mode of production.

The reader is invited to observe the questions and activities at the end of this section in order to focus on the essential features of the Japanese model.

**Section IV A - The Japanese Mind**

**Goal:**

To establish what broad generalizations we can make about Japanese cultural values *(i.e. the way they learn, think, communicate)* that can help us more easily understand their behavior in the workplace

Prior to comparing the U.S. and Japanese models of organizing a workforce, it may be helpful to first explore some areas of Japanese cultural outlook that guide that model. Any American businessman who marvels at the loyalty of Japanese workers, any economist who wishes an answer to their success in the area of "Process Innovations" on the assembly line, or any American that has observed with some amusement the Japanese worker's daily callisthenics, may gather as much insight by looking into the Japanese mind as by speaking of "Structural Incentives". The two are of course intertwined. **(Note)* Below, for example are listed four American produced television programs which along with many others do a terrific job observing the Japanese at work. In some scenes we see the callisthenics. In others we see after hours gatherings that mix business and pleasure with large amounts of alcohol. We observe the fact that much of what the Japanese learned about handling workers they learned from Americans. **Quality Control Circles** are only one example. So, as we observe the Japanese model a number of cultural imperatives or philosophical outlooks need brief exploring.

* Footnote:
For some real insight into the "Japanese mind" and the Japanese way of organizing the workplace, I suggest a) "If Japan Can Why Can't We" - NBC White Paper -1980; b) "We Are Driven" Nissan Corp Case Study - Frontline 1983; c) "The Kyocera Experiment" - Enterprise PBS - 1983; d) "The Colonel Goes to Japan" - Enterprise PBS 1983.

A) The Japanese Mode of Learning

The Japanese, it is said, are not creative, they are not "inventors", but they are prolific "Copy Cats". Since 1945 they have traveled in the U.S., carefully observing areas of American industrial innovativeness. They marveled over the Swiss watch and 25 years later adapted it into the electronic "Seiko". They watched the U.S. radio manufacturers and twenty years later Sony created the first transistor. In the early 1950's the Japanese studied two American innovative trends: 1) W.H. Demming of M.I.T. and his statistical method of measuring productivity and 2) the Harvard Business School's pioneering team decision-making. They watched intently, then applied both techniques to become leaders in the area of "Process Innovation" and accelerating **learning curves...** which we have discussed previously in Section #2.

Professor Muneo Yoshikawa, Associate Professor of Japanese at the University of Hawaii is not surprised at this Japanese success as he told a group of international educators in Oregon, "it is illustrative of how Japanese are taught to learn." Japanese learn by repetition.

Once given a form (KATA) they are taught to imitate it to the point of transcending it, making it a part of them *(Katachi)*. "The artist must learn to steal," explains the professor. Without breaking the "Old Form" they imitate it intently, even incessantly to make it their own. Whether in learning Judo from a Master or Quality Control Circles from Harvard's Graduate Business School, the Japanese mode of learning does not stress creativity or being original, but adapting the existing form. No wonder Americans marvel at the "Process Innovations" that have taken existing products and structural ideas to produce many of the world's best products.

B) The Japanese Mode of Communication

To a country the geographical size of California, with 14% of the total land habitable, the fundamental principle for its 126 million people is that all relationships must be in harmony. Given the scarcity of living space any deviation would spell disaster. Thus, relationships between the land and the individual, as well as the relationships between people,is one of achieving the right balance. Confrontation must be avoided at all cost. Perhaps even the virtue of directness or frankness must be sublimated in the effort not to offend. "The Japanese mind cannot accept a negative answer, says Professor Yoshikawa. "The Japanese have 30 different subtle ways to say no." A number of behaviors emanate from this relational imperative.

1) In all transactions, **patience** is a tremendous virtue. Westerners pride themselves on "getting to the point." The Japanese mistrust impatient behavior in anyone, in any transactional relation, on the street or in the workplace. Coming "around to the point" eliminates confrontation, preserves pride, wins advocates without creating enemies.

2) The role of ritual relationships is important in Japan. The Japanese believe in **form** and **ritual** in playing by age old rules. It is essential. The **process** of communicating is more important than the **end product.** What is decided is not so important as how it is decided. Company pledges are not empty ritual, nor are callisthenics at the worker's station. It gets everyone in "sync," it creates a united energy. To the Westerner what may appear to be "Fascist," *(denying the individual)* is a necessary ritual in a society where individuals rub so very closely together. Company decision-making techniques may appear very slow, but the Japanese believe in the process above all else.

3) To borrow a phrase from American sociologist David Reisman, the Japanese are exceptionally "other-directed". One's position with one's peer group is essential. To be out of step is very uncomfortable to the individual and to the group.**Harmony** means all are in agreement. Often harmony must be achieved outside of the workplace. Often workers and managers seek an intermediary such as alcoholic intoxication to break down barriers. It is a "ritual" practiced often amongst businessmen, and workers often into the late hours of the night.

C) The Japanese Value Subtlety

Professor Yoshikawa remarked that the Japanese hold an exceptionally "articulate" person as somewhat immature. Effective people *(leader, individuals of influence)* do not need to speak to communicate. What is not said is as important as what is said. The implicit is more important than the explicit. The Japanese mind is more "spatial" than "verbal" *(left/right brain theory)*.

Professor William Ouchi in his noted work **Theory Z** explains that:

> Productivity and **subtlety** go hand-in-hand Relationships between people are always complex and changing. A foreman who knows his workers well can pinpoint personalities, decide who works well with whom and thus put together work teams of maximal effectiveness. These "**subtle**" relationships can never be captured explicitly *(recorded in data or even explained in writing)*, and any attempt to bureaucratize workplace relationships by unions or managements would ruin these subtle relationships. Contracts that assign work teams strictly on seniority lose the subtlety, and productivity declines.[12]

Beside **subtlety,** Ouchi explains that productivity and **trust** go hand-in-hand within the Japanese model. Trust means subordinating the self particularly when it is detrimental to the group. It may be this lack of trust in our own culture that creates so many lawyers ready to remind us to maximize our own self-aggrandizing natures.

The problem of productivity, as Ouchi explains, can only be solved when we learn how to manage people in such a way that they work together more effectively. Toward that goal Ouchi's **Theory Z,** a best seller amongst American managers in 1982-83, endeavors to explain the Japanese model in theory and practice in such a way that American managers can adapt the best behavioral characteristics of the Japanese with our own cultural imperatives.

### The Task for Section IV

The Japanese model will be presented in six subtopics. Each is designed to compare the Japanese with American thinking on the same issue. The reader is invited to consider the six subtopics analyzing the structural incentive system of the Japanese model in light of the four philosophical underpinnings of the Japanese mind. In other words, how are values alike:

1) "Kata-Katchi" - as the principle of learning.
2) "Harmony, Subtlety, Trust" - as the underpinnings of human relationships.

Listed below are the six areas of analysis explaining the structure of the Japanese model.* How does the "model" increase the **productivity** of the workplace? Finally, what are the implications for America to adapt any portion of the model given our own cultural imperatives. Are we the "Copy Cats" that the Japanese have shown themselves to be?

**CHART Q • The Japanese Model**

| "The Abstract" | The Structure of the Japanese Model | Impact on the "Human Factor" of Productivity | |
|---|---|---|---|
| **Japanese Philosophical, Cultural Principles:**<br><br>"The Japanese Mind"<br>Ways of Learning<br>Ways of Communication<br>Ways of Thinking | 1. Lifetime Employment<br>2. Slow Evaluation, Promotion<br>3. Non-specialized Career Paths<br>4. Collective Decision-Making<br>5. Collective Responsibility<br>6. Holistic Concern | a. Process Innovations, Learning Curves<br>b. Worker Inventives<br>c. Management Strategies | **WHAT CAN AMERICA LEARN AND ADAPT FROM THE MODEL** |

## Section IV B The Japanese Model

## Organizing the Human Factor in the Workplace

### Goals:

1. To understand how the six major elements of the Japanese industrial model help the Japanese to organize human beings in the workplace.
   a. Lifetime employment
   b. Patient evaluation, promotion
   c. Non-specialized career paths
   d. Collective decision-making
   e. Collective responsibility
   f. Holistic concern
2. To cite specific examples how these six factors impact productivity performance in:
   a. Learning curves, process innovations
   b. Worker incentive
   c. Management strategy
3. To explore what are some central themes within the model *(i.e., worker incentives, security vs. insecurity)*? How do these themes reflect the nature of the "Japanese Mind"?

### A. Lifetime Employment

#### An Overview

Lifetime employment is not a single policy but the foundation for the five other policies within the Japanese industrial system. We will discuss the lifetime concept within the following subdivisions: 1) The Zaibatsu industrial structure 2) Role of women in the lifetime system 3) "Satellite manufacturers" 4) The link between education and the employer in the lifetime system 5) The method of compensation in the lifetime sector.

Lifetime employment is not universal in Japan. Not all firms can create the stability necessary for lifetime employment. The business cycle, ebb and flow in market demand, does not allow such assurances. Yet about **35%** of Japan's workforce, mostly in large manufacturing firms and government bureaus, is guaranteed employment for their work life.[12] An important point is that there is no coincidence that great productivity gains have been in the manufacturing sector that guarantees lifetime employment. Lifetime employment means that a major firm or government hires once a year, in the spring when young people graduate from junior high, high school, and university. A major firm which hires only these "sockies" takes on large inventories of new employees all at

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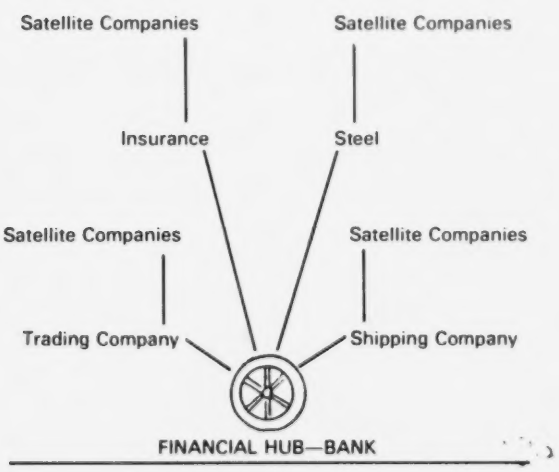
once even if they do not immediately have work. **Promotions are from within and a person with one, five, or 20 years at one company will not be hired or even considered by another company.** Once hired the new employee is retained until mandatory retirement at age 55. Employee termination would only occur in case of major criminal offense. Termination is harsh punishment since the one who has been fired has no hope of finding employment in a comparable firm. He must instead turn either to a minor firm that pays low wages and offers little security or else return to his hometown for public assistance. (Note: all public assistance in Japan is handled at the **local level** — each city, town responsible for those that cannot compete in the job market. But since unemployment is only 2-3% compared with American rates of 8-10% the burden has not been overwhelming. This could change in the future of course.)

At 55 all employees except the top managing directors of companies must retire. The company pays each retiree a lump sum separation amounting to 5-6 years worth of salary.

### 1. The Zaibatsu Structure of Industry

Before World War II major companies in Japan were organized into a small number of groups called Zaibatsu. Each group consisted of 20-30 firms clustered around a major bank. Each group had a representative company from a major sector of the economy.

**CHART R • Bilateral Monopoly**

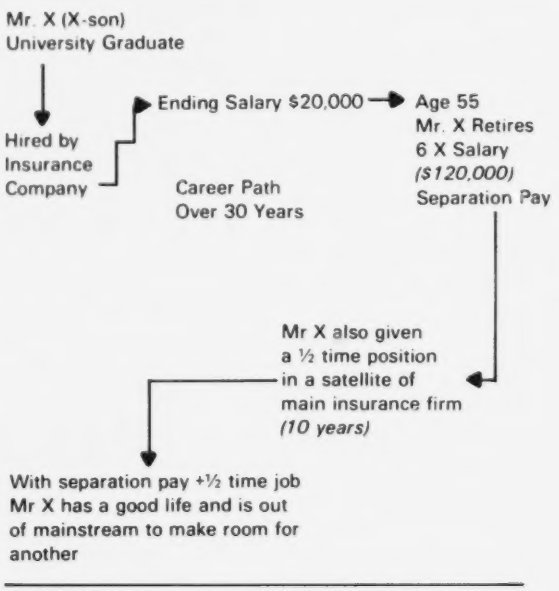



Around each major company functioned a group of satellite companies *(there could be up to 100 small firms).* These firms, a family or perhaps up to 100 employees, manufactured a subassembly or sold a service. They sold only in a bilateral monopoly to their one major company. These satellites were second class economic partners whose employees did not enjoy the security, wages, and privileges of those in the larger company.

These "bilateral monopolies", were unheard of in America where the market dictates that each company have multitudes of suppliers and backups in case of transactional breakdowns *(price grouping).* Instead in Japan suppliers and their clients coordinate smoothly with one another resulting in significant productivity gains. Zaibatsu's were legally dissolved after the war by the American occupational forces interested in a more "competitive market structure." Even though these systems were dissolved, the underlying relationships continue. The relationship between the Zaibatsu and the lifetime employment system is an intimate one. Companies do not pay into a government social security system but fund their own forms of social security.[13]

Mr. X, for example enters a major insurance company.

**CHART S • Lifetime Career Path**



Banks, at the center of the old Zaibatsu have the greatest freedom to place retiring employees within the major companies. Those that move into satellite firms from high school or university *(usually with lower exam marks or from an inferior school in the educational hierarchy)* face the difficulty of advancement. Upper strata retirees continually funnel in block to their advancement. Thus at 55 they take their lump separation pay and that is it. They can open a small retail shop or move in with their family.

**2. Women - Lifetime Employment**

Every major firm in Japan has a large pool of temporary employees... mostly women. Even now it is rare that a major Japanese firm will hire women into professional or managerial positions. Working class women are expected to work only 5 or 6 years. When their children enter school they return to their original employer.

Even if they work 20 more years, they are still considered temporary and would be laid-off first in any slack period. Yet the company will accomodate scheduling of hours for women who have children to care for. They may "stagger" work shifts so women can maintain the dual role with less complications. The bottom line however is that women serve as a "buffer" to protect job stability of men.[14]

**3. Satellite Manufacturers in the Lifetime Employment Scheme**

They exist largely at the pleasure and mercy of the large company. They leave little hope of growing into a sort of major competitor. The large firms maintain a dominant position and the government favors an informal yet tight knit "Zaibatsu concept of organization". Small firms can grow only in new markets like consumer electronics or biotechnology. They would have trouble obtaining licenses to import raw materials necessary to compete with the major firms. So, the Japanese favor the tight oligopoly rather than ready access and growth. Major firms furthermore only contract out those services that are most susceptible to business cycle fluctuations.

During a recession bankruptcies occur in the satellite sector long before the major firm is affected. This system has led to a clear hierarchial division among firms in Japan. Most people agree on which group and firms within groups are the most desirable places to work. In the U.S., there are no general consensus of preferred firms. In Japan an employee simply wants to work where there are the largest **number of options at 55**.[15]

**4. Educational Pressures in the Lifetime Employment Industrial Stratification** *(Also see "Human Capital")*

The stratification among firms is paralleled by a similar stratification among educational institutions. The large firms, those that serve as the "hub" in the "Zaibatsu" hire new management exclusively from the graduating classes of only select universities. At the top of the strata are the prestigious Imperial universities *(University of Tokyo, Yokohama University)*. Each company selects one or maybe three to five universities and goes nowhere else for its candidates. This system has created enormous pressure to gain admission to the "Imperial" universities. Admission alone virtually assures a young person of entry into a major firm or government bureau, and the cream of occupational life. *(Exhibits T/U illustrate the educational process that stratifies Japanese youngsters through the rigorous exam system.)*

The pressure to succeed in the education "sifting" process, which is run like an **"Egalitarian Meritocracy"*** *(note)* is terrific and is aimed more and more at the very young. The pressure to enter top primary schools in turn enhances the student's chances to get into a "top" secondary school which in turn offers the chance for top university— top employment— top retirement. It is not unusual to assume Japanese parents must think very early *(pre-school)* about the "social security" of their offspring.



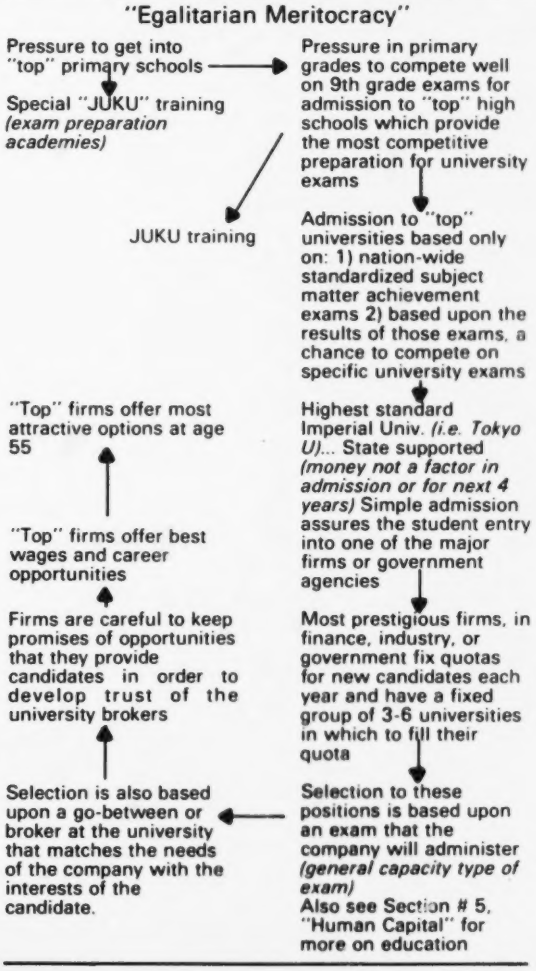
*(note) Merit alone is rewarded, everyone has an equal chance *(at least theoretically)*.

### Quote T • Pressure to Achieve

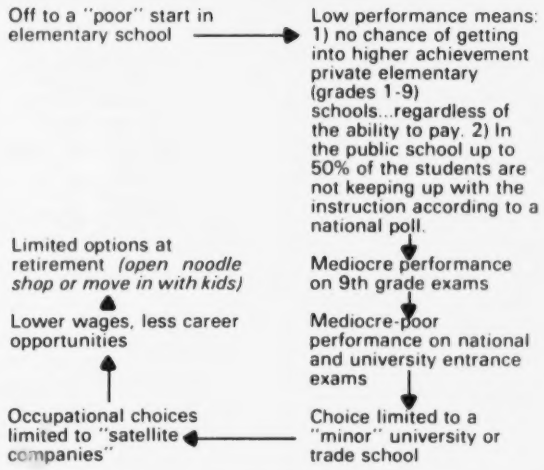
The final result was described to me by an old friend from Japan who was visiting one evening. He seemed somewhat subdued that evening, and I asked him what was on his mind. "Well," he said, "today is the day that my four-year-old son, who is back in Tokyo, is taking the entrance examination for a special kindergarten. I'm pretty sure that he won't get in." "That's ridiculous!" I replied. "I've met your children— they're very bright and you have a terrific job, so of course he'll get in."

"No," my friend responded, "you don't understand. In this special kindergarten, there are only thirty openings for more than 500 applicants. Of those 500, more than half have been going to a special summer school that does nothing but drill those children for eight hours a day, six days a week, in how to take the entrance exam for that one specific kindergarten. Although I earn a pretty darn good wage, it's not nearly enough to afford one of those special schools because they charge a tuition of $1,000 per week. Of course, such special summer and after-school training does not end there but continues through elementary, junior high and high school, all to maximize the chances of a high score on the ultimate university entrance examinations."[16]

### Chart U • Stratification in Education Matches the Stratification in Industry


"Egalitarian Meritocracy"
Pressure to get into "top" primary schools
Pressure in primary grades to compete well on 9th grade exams for admission to "top" high schools which provide the most competitive preparation for university exams
Special "JUKU" training (exam preparation academies)
JUKU training
Admission to "top" universities based only on: 1) nation-wide standardized subject matter achievement exams 2) based upon the results of those exams, a chance to compete on specific university exams
"Top" firms offer most attractive options at age 55
Highest standard Imperial Univ. (i.e. Tokyo U)... State supported (money not a factor in admission or for next 4 years) Simple admission assures the student entry into one of the major firms or government agencies
"Top" firms offer best wages and career opportunities
Firms are careful to keep promises of opportunities that they provide candidates in order to develop trust of the university brokers
Most prestigious firms, in finance, industry, or government fix quotas for new candidates each year and have a fixed group of 3-6 universities in which to fill their quota
Selection is also based upon a go-between or broker at the university that matches the needs of the company with the interests of the candidate.
Selection to these positions is based upon an exam that the company will administer (general capacity type of exam)
Also see Section # 5, "Human Capital" for more on education

### CHART V • Other Choices in the Strata in the "Meritocracy"


Off to a "poor" start in elementary school
Low performance means: 1) no chance of getting into higher achievement private elementary (grades 1-9) schools...regardless of the ability to pay. 2) In the public school up to 50% of the students are not keeping up with the instruction according to a national poll.
Limited options at retirement (open noodle shop or move in with kids)
Mediocre performance on 9th grade exams
Lower wages, less career opportunities
Mediocre-poor performance on national and university entrance exams
Occupational choices limited to "satellite companies"
Choice limited to a "minor" university or trade school

### 5. Compensation in the Lifetime Employment Scheme— and Productivity

Every major firm in Japan pays their employees a large bonus, typically each six months. The bonus each year adds up to five to six months worth of salary for each employee, and since all receive the same fraction of the salary, the amounts are not contingent on individual performance, but only on the performance of the firm.[17] This compensation method shifts in part the entrepreneurial risks of business from stockholders to employees who suffer through bad years and prosper in good. It is obvious then in a downturn in the economy *(market recession for example)* the large firm would cut bonuses and other compensation to the employees rather than eliminate the workforce.

These Japanese companies would not suffer through strict wage agreements that lead to bankruptcy during these lean periods as occurs in the U.S. **In the U.S., employees enjoy salary increases** *(COL - cost of living)* **even if their firm suffers a decline in earnings.** Bonuses give employees an incentive to feel a part of the firm and motivate them to cooperate. The lifetime system allows a firm to pay a small bonus in a bad year without laying anyone off, and when good times return, a productive workforce is ready to gear up. In an exceptional year employees receive larger than expected bonuses in a lump sum and tend to save large portions of it. So combined with tax incentives to save Japanese industries can count on their own employees for a fund for capital formation in order to

expand rapidly during prosperous times. In conclusion the lifetime compensation system enhances productivity directly because:

1) Worker's standard of living is directly tied to output.
2) When output goes down so does compensation *(thus no decline in productivity - output per man-hour during slack periods).*
3) The workforce remains prepared for rapid build up *(no need for hiring another group of inexperienced workers to fuel recovery).*
4) The bonus system provides a ready capital pool of worker savings during expansion times.
5) Note: **Merit pay...** individuals receiving special bonuses or other compensation for doing a particularly good job is unheard of in the lifetime system... The Japanese feel it would deter from group loyalty, turn each individual against individual and ruin the harmony that teaches that individual rewards ($) come from the achievement of the whole team.

## B. Evaluation & Promotion

### "Performance Not Politics"

The process of evaluation and promotion in the Japanese company seems very slow, particularly to young managers. Consider a fictitious case of a young graduate of the University of Tokyo:

**QUOTE W • Long-term Evaluation - Promotion**

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The young graduate "Sugao" has accepted a position at the fictitious Mitsubeni Bank, one of the major banks. For ten years, Sugao will receive exactly the same increases in pay and exactly the same promotions as the other fifteen young men who have entered with him. Only after ten years will one person receive a larger promotion than another.

The very slowness of this evaluation process discourages the playing of certain kinds of short-term corporate games, although it does not entirely rule out such behavior. Sugao lacks an incentive to initiate projects or to press for decisions that may look good in the short run but may be unacceptable for the longer run. He also has no reason to advance his career at someone else's expense: Sugao knows that he will not be evaluated until the long run, and he knows that anyone unfairly treated will still be at the bank, due to the lifetime employment policy.[18]

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While the process seems slow to many young managers in Japanese firms it promotes a very open attitude towards performance evaluation in the **long run.**

The goal is to reward and advance people based on their long term productivity performance assessed over the natural period of a decade. Then true merit will be rewarded with promotion upward, not the result of infighting or personal internal competition or individual politicing but by long-term value openly observed by others.

The slowness of formal evaluation and promotion seems wholly unacceptable to many Americans. Americans desire rapid feedback and advancement. Also the system seems to prevent the early assignment of the most capable people to important jobs. However, formal titles and actual responsibility seem often to not be matched in Japanese companies. It is often the case that while a senior employee may hold the title of department manager, it will be an untitled person many years his junior who will carry lead responsibility for seeing that things happen. It is this **"de-coupling"** of formal titles from actual responsibilities that avoids a potential hazard of the slow evaluation and promotion.[19] Those most able easily and quickly receive responsibility, but the irreversible step of promotion only comes when they have more completely proven themselves. In addition major contributors to success in the past are assured the security of title and higher wages despite the threat of young employees. This fact, observed by everyone, causes employees to be more willing to wait their turn.

It is advanced by many firms that the really productive ideas come from those in the lower to middle job classifications *(middle managers).* The new ideas that assist productivity and give the Japanese worker their reputation for on-the-job contributions to increasing efficiency, would not come about unless younger members of the workforce felt that they would be listened to and taken seriously.

Also, the younger person is willing to take on more responsibility and more pressure without commensurate regard. Why? Because every employee is also a member of as many as eight or a dozen work groups each with a different task. These groups work very closely

together, and although their membership changes periodically, all know that throughout a career, each person will continue to function in many such groups. To someone who feels closely integrated with any small group, failure to adhere to the norm of the group can create severe penalties, like loss of group support. More than hierarchical control, pay, or promotion it **is group membership that influences behavior.**

The Japanese organization takes in only young people who are still in the formative stages of life. It subjects them to multiple group memberships, and so inculcates the kind of devotion to co-workers that one sees for example, in the U.S. Marines.

The physical layout of the Japanese office also supports the attitude of performance evaluation.

**QUOTE X • Physical Layout Promotes Group Concept**

Physical layout of the marketing division of one of the major Japanese automobile companies: the work space is one huge room with no internal walls or partitions of any sort. Row upon row of long tables fill the room with the staff for South America sales at one table, for European sales at another, and so forth. The section chief sits at the head of each table, and the division general manager has a desk at the head of the room, much like a school teacher. Around each table the staff and their secretaries sit side by side, with telephones and order books piled in the center of each table. With a constant hubbub of talk, both serious and playful, everyone notices just what each person is up to.[20]

Under such circumstances individual performance is "common knowledge". It is inconceivable that one of the section chiefs, for example, would put out a special report just to impress someone. Everyone knows what is going on.

This public work environment promotes a family feeling yet can, of course, be intolerable to anyone whose values and goals do not conform. *(See "side effects" - Section 4D).*

## C. Non-Specialized Career Paths

"In the U.S. we conduct our careers **between** organizations but within **one career** specialty. In Japan people conduct careers **between specialties** but within **one organization.**"[21]

A frequently overlooked feature of the Japanese organization is their development of individual careers. Consider:

**QUOTE Y • Non-specialized Career Training**

A young university graduate who has just joined the Mitsubeshi Bank for a lifetime, Sugao will enter in a management training position, spending perhaps a year just meeting people and learning his way around while working on various assignments. Then he will be sent out to a branch to learn bank operations, including working with tellers and managing the flow of information, paper, and people. From there he will be brought back into headquarters to learn commercial banking, the process of lending large sums to major firms with whom the bank maintains relations. Then back out to yet another branch where he will be in the retail lending department, learning to make automobile loans and other small consumer loans to individuals. From there he may come back again to headquarters, this time to a position in the personnel department, an essential and important activity with which he must be familiar. At about this time, ten years will have passed and Sugao will gain his first major promotion, perhaps becoming a section chief. In this capacity he will move again to another branch, perhaps in charge of new business, a job in which he will aggressively call on potential customers and attempt to get their business. He may then move back to headquarters, this time in the international division where he will help to coordinate the banking needs of Japanese firms who have operations in the United States or in France.[22]

This Japanese bank will not create an expert with detailed knowledge of any one particular area. That is a weakness of the Japanese system. However, when it comes time to achieve coordination across functions, say for the purpose of bridging the gap between commercial lending and operations in order to computerize some commercial lending information, then the Japanese form has great advantages.

Virtually every department will have in it someone who knows the people, the problems, and the procedures of any other area within the organization. Furthermore, every employee knows that they will continue through his career to move between functions, offices, and geographical locations. Thus the person from another department in the firm who is asking for assistance today may be the person who will be his co-worker or even superior tomorrow. Thus there is not

only the ability but also the incentive for taking a broad, organization-wide point of view and for cooperating with everyone.

In the U.S., companies specialize their jobs and individuals specialize their careers. As a result, a semi-conductor specialist or a personnel manager, for example, can move from one company to another within the same specialty and begin working immediately. Full productivity may take longer but contribution begins right away. In Japan it is difficult to take a worker from one company to another and expect full productivity. The Japanese do not specialize in any one technical field; they specialize in an organization, in learning how to make a specific, unique business operate as well as it possibly can.[23]

One effect of lifelong job rotation is employer incentives to develop skills and commitment of the employees. In the U.S. employers are reluctant to invest in training employees in new technical skills, because a skilled employee can easily find another employer, taking along that investment. In some areas *(i.e., aerospace)* some companies "raid" the most skilled managers from their competitors. Although the raider must pay a higher wage to attract a highly skilled person, the cost is lower than in-house training. In-service training is a time consuming and costly venture. Consequently companies in the U.S. do much less training than they could and our economy as a whole suffers due to loss in overall productivity.

A Japanese company committed to lifetime employment will go to great lengths **to build loyalty among its employees by ensuring fair and human treatment.** In the U.S. **by comparison employees can be laid off during the next downswing** in the business cycle and thus represent only a short-term burden to the employer. It is a simple fact, that does not ignore economic incentives. People committed to long-term relationships have stronger commitments to behave responsibly toward one another.

### D. Decision-Making Process and Productivity - Japanese vs. American Styles

Decision making by consensus has been researched in the U.S. and Europe for 20 years. The data concludes that a consensus approach *(those who will be expected to implement the decision will have a chance to participate in its creation)* is preferable. It develops more creative decisions and makes for more effective implementation that does hierarchical individual decision making. Western style participative decision making traditionally accepts a small group (8-10) of specialized managers sitting around a table with a skilled individual at managing relationships. When the group agrees on single compromise a "consensus" has been reached if each manager says:

1. That my point of view was understood,
2. That I understand your point of view,
3. Whether or not I prefer the final decision, I accept it because it was arrived at in an open and fair manner.

Some managers are instructive in pursuit of consensus but most are not, either in the company, the school, the church or in a government bureau.

The Japanese go much further and are much more subtle than the Western approach to consensus or "team" management. In Japan when a decision needs to be made everyone who will feel its impact is involved in making it. In the case of a decision about where to put a new plant, for example, or whether to seek new markets in a foreign country or whether to mechanize a production process it will mean often 60-80 people directly involved in the decision. A group of three may be assigned with the duty of managing the decision *(talking with all those concerned)* and each time there is a modification contacting the people again. It may take a long time but once the decision is reached everyone affected will be likely to support it. Understanding the decision and supporting it may supersede the actual content of the decision since the competing alternatives may be just as good. What is more important is the degree of information and commitment that everyone has.[24] That is where productivity comes in.

### QUOTE Z • The Ringi Process

A friend in one of the major Japanese banks decribed their process. "When a major decision is to be made, a written proposal lays out one 'best' alternative for consideration. The task of writing goes to the youngest and newest member of the department involved. Of course, the president or view-president knows acceptable alternatives, and the young person tries like heck to figure out what those are. He talks to everyone, soliciting their opinions, paying special attention to those who know the top man best. In so doing he is seeking a common ground. Fortunately, the young person cannot completely figure out from others what the boss wants, and must add his own thoughts. This is how variety enters the decision process in a Japanese company. The company relies so heavily on socializing employees with a common set of values and beliefs that all experienced employees would likely come up with similar ideas. Too much homogeneity would lead to a loss of vitality and change, so the youngest person gets the assignment."

Frequently, according to my informant, this young person will in the process make a number of errors. He will suggest things that are technically impossible or politically unacceptable, and will leave things out. Experienced managers never over-direct the young man, never sit him down and tell him what the proposal should say. Even though errors consume time, effort, and expense, many will turn out to be good ideas. Letting a young person make one error of his own is believed to be worth more than one hundred lectures in his education as a manager and worker.

Ultimately, a formal proposal is written and then circulated from the bottom of the organization to the top. At each stage, the manager in question signifies his agreement by affixing his seal to the document. At the end of this **ringi** process, the proposal is literally covered with stamps of approval of sixty to eighty people.[25]

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American managers criticize the Japanese for the excessive length that a decision takes and also the seemingly intentional ambiguity that the Japanese seem to put forward when a decision is finally reached. The Japanese managers retort that their system is admittedly methodical but the implementation is automatic since everyone feels comfortable with the decision. They criticize the quick decision making of American managers as being the reason why they say it takes forever to implement a decision in a U.S. company.

## E. Collective vs. Individual Incentives to Produce

It is difficult for Americans to grasp the Japanese collective incentive system, the collective responsibility ethic. A very creative American electronics firm that was operating in Japan in 1982 had a reputation in the U.S. for innovation in the workplace, novel planning, design, management systems. The parent company decided to make a thorough study of Japanese workers and continue the best American and Japanese styles. In their study they discovered that Japanese firms almost never make use of the individual work incentives, such as piece work or individual performance appraisal tied to salary increases. They had previously assumed that rewarding individual achievement and individual ability is always a good thing. The U.S. electronics company found otherwise.

### QUOTE A-2 • Japanese Incentive System

In the final assembly area of their new plant long lines of young Japanese women wired together electronics products on a piece-rate system: the more you wired, the more you got paid. About two months after opening, the head foreladies approached the plant manager. "Honorable plant manager," they said as humbly as they bowed, "we are embarrassed to be so forward, but we must speak to you because all of the girls have threatened to quit work this Friday." *(To have this happen, of course, would be a great disaster for all concerned.)* "Why," they wanted to know, "can't our plant have the same compensation system as other Japanese companies? When you hire a new girl, her starting wage should be fixed by her age. An eighteen-year-old should be paid more than a sixteen year old. Every year on her birthday, she should receive an automatic increase in pay. The idea that any one of us can be more productive than another must be wrong, because none of us in final assembly could make a thing unless all of the other people in the plant had done their jobs right first. To single one person out as being more productive is wrong and is also personally humiliating to us." The company changed its compensation system to the Japanese model.[26]

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Another U.S company in Japan had a similar experience— this time with the "Productivity Suggestion Box" idea that they thought the Japanese were so good at. The results were similar.

**QUOTE B-2 • Collective vs. Individualistic Incentive System**

Individual workers were encouraged to place suggestions to improve productivity into special boxes. For an accepted idea the individual received a bonus amounting to some fraction of the productivity savings realized from his or her suggestion. After a period of six months, not a single suggestion had been submitted. The American managers were puzzled. They had heard of many stories of the inventiveness, the commitment, and the loyalty of Japanese workers, yet not one suggestion to improve productivity had appeared.

The managers approached some of the workers and asked why the suggestion system had not been used. The answer: "No one can come up with a work improvement idea alone. We work together, and any ideas that one of us may have are actually developed by watching others and talking to others. If one of us was singled out for being responsible for such an idea, it would embarrass all of us." The company changed to a group suggestion system, in which workers collectively submitted suggestions. Bonuses were paid to groups which would save bonus money until the end of the year for a party at a restaurant or, if there was enough money, for family vacations together. The suggestions and productivity improvements rained down on the plant.[27]

**Two Optional Interpretations**

A) This kind of collectivist approach implies a loss of individuality, a loss of freedom to be better or different, and to hold different values. It seems counter to our maverick creativity exemplified by our past inventors and industrial leaders from Edison to Rockefeller.
B) Industrial life requires interdependence of one person on another. In the Japanese mind everything important in life happens as a result of collective effort. Therefore, to attempt to assign individual credit or blame to results is unfounded.

**Intentional Ambiguity - "Subtly Applied"**

In the U.S. we have job descriptions with hopefully no confusion over who is in charge of what. We negotiate between employees in order to establish "turf" or boundaries on where my decision authority ends and where your authority begins. Many U.S. businessmen are unhappy with dealings with the Japanese. "If only they would tell me who is in charge, then we could make progress."

The complaint displays a lack of understanding that in Japan no one individual carries responsibility for a particular turf. Rather a group or team of employees assumes joint responsibility. The collective nature of responsibility assignments, as many American critics point out, allows some decisions to "fall through the cracks." Some things do not get done because "someone thought someone else was handling it." But there is an important reason for collective assignments and it relates directly to the productivity issue. Many Americans say lifetime employment is inefficient because it keeps the ineffective worker. A partial answer comes from the collective assignment of decision responsibility.[28]

## F. Holistic Concern for People

Most Western organizations practice an attitude of "partial inclusion"— an understanding between employee and employer that the connection between them involves only those activities directly connected with the completion of a specific job. Many Western analysts have argued that partial inclusion in various organizations maintains the emotional health in individuals, being only partially included in various organizations besides the company *(lodge, Rotary business fraternity, City Club)* allows for easier moving from one group to another while maintaining an independent self-concept. This fits the specialized career path mode of social and economic mobility. How could a manager become so loyal, so tied to any one company to jeopardize this movement as an individual upward by seeking specific career assignments in strategic locations even if it means joining a competitor? The Japanese by contrast form "inclusive" relationships.

**QUOTE C-2 • Inclusive Relationships**

Anthropologist Thomas Rohlen has described in detail the process of inducting young trainees into a Japanese bank. Training culminates in formal ceremony held in the company auditorium. The bank president stands at the podium, the training director at his side. The young trainees sit in the front rows with their mothers, fathers, and siblings behind them. The president welcomes the new members into the bank family, challenging them to live up to the expectations of their trainers and leaders. He speaks also to the parents, accepting from them the challenge of providing for their children not only honest work, but also accepting the obligation to see to their complete physical, intellectual, and moral development. A representative of the parents next takes the podium, thanking the bank for offering this opportunity to their offspring an reaffirming the charge to the trainees to be as loyal to their new family as they are to their blood family.[29]

Some Japan experts argue that the underlying social patterns developed under feudalism prepared the Japanese for dependent relationships on a paternalistic force to meet their needs and give loyalty in return. When economic and social life is integrated the relationships between individuals become intimate rather than simply connected through a skill or single work relationship. Individuals are related through multiple bonds of intimacy, they discourage selfish or dishonest action in the group since abused relationships cannot be left behind. People who live in the company dorm, play on the company team, work together on five different committees and who know the situation will continue for the rest of their lives will, develop unique relationships, values, and beliefs and become compatible over a wide range of work. Each person's true level of effort and of performance stands out without merit compensation. Advancement is done by the group. The group pushes people upward when the group thinks they are ready.

## Focusing on "The Japanese Model"

Section IV B

### A. Lifetime Employment

1. What percentage of the Japanese workforce is part of the "lifetime employment" school? What sector of business does lifetime employment dominate?
2. For how long does the "lifetime" commitment last— who pays the bills? What about retirement?
3. Explain the Zaibatsu tradition of organizing industry. What are "satellite" companies? What is the "bilateral monopolistic" relationship between these satellites and the large manufacturers?
4. Explain the social stratification within the lifetime system of employment. What are the disadvantages of being in the satellite industries?
5. How are women an "employment buffer" in the system?
6. Explain the way the stratification of the educational system fits into the economic stratification of the Zaibatsu industrial system. (Exhibits T/U/V)
7. Why is educational performance the key to success in the lifetime system?
8. How is the method of compensation *(wages and salary)* so different in Japan than in the U.S.? Does it have to do with productivity?
9. List the ways the lifetime employment system enhances productivity.

### B. Evaluation and Promotion

10. (Quote W) Why does it take 10 years before "Sugao" is rewarded with wage, bonus or position in any way that sets him apart from the fellow employees that were hired in the same year? What is the sense of waiting 10 years to recognize someone for their merits?
11. What is meant by "decoupling" formal titles from actual responsibilities? What is the reason for this decoupling and why do the Japanese believe that it should be this way?
12. Why is the dominance of the group so important to the incentive structure of the individual? Give examples.
13. How is the physical layout of many Japanese companies arranged in such a way as to make the individual ambition subordinate to group success?

**C. Non-Specialized Career Paths**

14. What is the value of creating "generalists" rather than specialists within the Japanese management structure? Remember that divisions of labor, specialization of tasks were both, from the time of Adam Smith, designed to **accelerate learning curves** and thus increase productivity. Explain the premise of non-specialization of Japanese employees; why do they argue that it accelerates productivity?
15. Why may a slower growth economy tend to encourage "non-promotional" mobility? What were the findings of the M.I.T. research group on this?
16. Explain the quote "In the U.S we conduct our careers between organizations but in one speciality. In Japan people conduct careers between specialities but within one organization."
17. Compare U.S./Japanese attitudes toward: a) on-the-job training b) employee, employer loyalty. How do two different modes of career development determine the nature of both a) and b)?

**D. Decision-Making Process and Productivity**

18. Define "consensus" decision making - American style.
19. Define "consensus" decision making - Japanese style. What are the essential differences?
20. Describe the "Ringi System". (Quote Z) Explore at least two facets of the "Japanese Mind" illustrated in this, to Western eyes anyway, exceptionally tedious process of arriving at "consensus"

**E. Collective vs. Individualistic Incentives to Produce.**

21. In both Quotes A-2 and B-2, the American electronics firm learned that increasing individual productivity by isolating an individual and rewarding that individual's performance didn't work with the Japanese. Why not? What reasons did the Japanese workers give for resenting rewarding individual merit?
22. Explain how the principle of interdependence to the Japanese means that the only logical way to regard performance is on a collective basis over a long-run evaluation.

**F. Holistic Concept for People**

23. What is meant by "inclusive relationship"?
24. Relate this "holistic approach" to the individual to the "Japanese Mind". What does it have to do with "trust"?

## Section IV C ●Appendix ● The Quality Control Circle

Japanese Style

**Goals:**

Quality Control Circles

1. To know what are the central objectives of Quality Control Circles— Japanese style.
2. To know why the Quality Control Circle is an essential part of the Japanese model. How does it serve as the main ingredient to productivity performance?

### The Q-C Circle
William Ouchi - **Theory Z,** pg 223-229

One of the most intriguing lessons of the art of Japanese management— and one that is close in spirit to Theory Z — is the Quality Control Circle or Q-C Circle. In fact, many American managers who have visited Japan have been struck by the effectiveness of these circles and are determined to implement similar techniques in their own companies at home.

The explanation for the circles' popularity lies in their unique function. What they do is share with management the responsibility for locating and solving all the little things that go wrong in an organization— and then put up the flag. For that reason, The Q-C Circles, which were developed in Japan, are a useful method for achieving high quality, improved productivity and increased employee morale— all at a relatively low cost. So popular are they here right now that they are in danger of becoming the management fad of the eighties, replacing such previous fads as "Zero-based Budgeting" and "Management by Objectives." Nevertheless, whatever their longevity: for those companies that make a commitment to adapting the underlying principles of the Q-C Circle— and not just their ideals— the circles provide a way to improve an organization at all levels.

In Japan the results are spectacular. As of December, 1979, there were more than one hundred thousand Q-C Circles officially registered with Q-C Circle Headquarters of the Union of Japanese Scientists and Engineers." This figure does not include any of the estimated one million additional unregistered circles. According to Mr. Joji Arai,* director of the Washington, D.C., office of the Japan Productivity Center, the average Q-C Circle in Japan produces each year fifty to sixty implemented suggestions per worker. The current record is held by one company that averaged **ninety-nine implemented suggestions per worker** for a single year. Imagine the mass involvement of all workers at all levels. It adds up to thousands of work improvement suggestions and ideas that contribute substantially to the productivity of the Japanese firm. These improvements, however, do not come without cost. Mr. Arai also reports that the average Japanese employee, during his or her first ten years of employment, receives 500 days of training, including classroom instruction and on-the-job training.

*Note - The Q-C Circle - Mr. Arai's and Dr. Deming's comments are contained in the NBC special "If Japan Can Why Can't We" -1980.

How do the circles work so well? In Japan a Q-C Circle typically consists of from two to ten employees who are permanently assigned to that circle. All employees *(temporary, part-time, and employees at all levels)* are encouraged to participate. Each circle's employees form a natural working group in which everyone's work is related in some way. In the larger scheme, individual circles are related to one another through "Q-C Circle" — temporary federations of a number of circles related to one another within a plant, formed for the purpose of working on one specific project. The task of each Q-C Circle, headed by a foreman, is to study any problems of production or service that fall within the scope of its work. In most cases, a circle undertakes a study project that can be solved within about three months, and which takes no longer than six months. Then, in each November— which is designated National Q-C Circle Month— conventions are held, study of the circle's efforts is undertaken, and recognition is offered.

Ordinarily, each circle meets for an **hour or two each week, sometimes on company-paid time, sometimes on the employees' time,** to discuss their project. A typical project may involve a problem in quality which one or more circle members have identified. Perhaps they will suggest that the problem is a serious one, and will discuss it with other members of the circle, including the foreman. The group may then begin a systematic study of the problem, collecting statistics on its type and nature, perhaps even counting the number of defects per part at each of the stages in the production process covered by the members of the circle. At the end of the study period of perhaps six weeks, members meet again to analyze the data, drawing charts and graphs to determine the problem's source. Is it a defective design being supplied by engineering, a mis-designed part coming from suppliers, a machine improperly set up, or a lack of coordination among members of the circle? Once the problem is identified, circle members then suggest steps that should be taken to correct it. If those steps can be undertaken entirely by members of the circle, they will implement their suggestion. If the problem is a more general one, then members may call upon the formation of a Q-C team to seek out the plant-wide source of the problem; or they may make a recommendation to upper levels of management on what the solution should be. Ultimately, a solution is identified and implemented. The results of the study are published in the plant newsletter; recognition for successful implementation is given to that circle; and if it is a particularly innovative or important solution, it will be nominated for a company, industry, or even national award. The company will report to its employees the collective impact of all implemented suggestions so that everyone will see the relationship between their successful work and the profits of the company and the size of their bonuses.

Q-C Circles have been succeeding in Japan for a long time. They were begun after World War II, in January of 1949. Eighteen months later, Dr. W.E. Deming, an American professor of statistics, was invited to teach in the first "Eight-Day Quality Control Seminar," which was organized by the Union of Japanese Scientists and Engineers. The impetus for the seminar was the Union's belief that industry's long-standing separation of study and analysis from work routines was ineffective. The engineers felt they could not possibly investigate all the

problems of quality and productivity within a plant, and so were determined to provide framework within which workers could share those tasks. Dr. Deming provided the workers with training in statistical techniques that could be used to identify problems of quality and productivity. These techniques which have been developed by industrial engineers in the United States, formed the underlying analytical tools still used by Q-C Circle. While there is no particular magic in the statistical techniques themselves— they have been widely used in the United States for more than 100 years— **what is different is the determination of the Japanese to invest in teaching these techniques to production-level employees, and then to delegate to these employees the power and authority to influence changes in the organization of work, in order to bring about improvements in quality and productivity.** It was this sharing of power with lower-level employees and the investment in training these employees that marked Japan's innovation.

The importance of the statistical techniques in Japan was so great that in June of 1951 the "Deming Prize" was instituted to recognize outstanding achievements by Q-C Circles in Japan. The American influence was strengthened in 1954 when Dr. J.M. Juran, a United States professor, was invited to teach in the "Quality Control Management Seminar," also organized by the Union of Japanese Scientists and Engineers. But statistics alone were not the crucial element in the circles' success. The combination of the measurement techniques contributed by Deming and Juran plus the Japanese attention to the human side of organization has produced the phenomenon of the Q-C Circle as we know it.

As the Japanese emphasize, the success of their Q-C Circles depends not solely on technique but on exactly this underlying human aspect of their productive aims. As the Union put it, the fundamental purposes of the Q-C Circle are to:

*Contribute to the improvement and development of the enterprise.

*Respect humanity and build a happy, bright workshop which is meaningful to work in.

*Display human capabilities fully and eventually draw infinite possibilities.

Clearly, there is quite a distance between the attention to statistical techniques on the one hand, and the grand vision embodied in these general purposes on the other. In the successful implementation of the Q-C Circle, it is essential that **both** qualities be fully implemented. The danger in the United States appears to be that many companies make use of the statistical techniques, while regarding the general purposes as nothing more that meaningless homilies to be largely ignored.
When the human and the statistical are thoughtfully combined, the scope of Q-C Circle is nearly limitless. According to the Union of Japanese Scientists and Engineers handbook, "Q-C Circles are usually introduced into production workshops. However, the circle has already expanded beyond the production floor, for example, to offices, sales departments, warehouses, banks, insurance companies and so on. There are Q-C Circles involving both a parent company and its affiliates or subcontractors that work closely together in the day-to-day operation. Many of these circles have successfully improved their operations, as well as communications between them." "Q-C Circles of rival companies hold exchange meetings, for instance in such areas as the iron and steel and shipbuilding industries. Exchanges of this nature may or may not be possible, depending on the philosophy of top management and the historial background of the cooperative relationship." Because ninety-four percent of Japanese children attend senior high school or technical high school, the vast majority of Q-C Circle members are at least high school graduates. In fact, in many technical high schools, there is an increasing demand for the study of techniques and concepts required for Q-C Circles activities, in addition to the study of conventional technical and engineering disciplines.
But perhaps the greatest contribution of the Q-C Circles in Japan concerns the treatment of the individual worker, as the handbook points out:
"No matter how much factories are mechanized, so far as there are people still working there, they should be treated as human individuals. But this aspect is seriously neglected these days. Those companies that do not give due consideration to humanity will lose their best people sooner or later. There was ample evidence of this in such countries as the United States in the past twenty years or so. There can be no excuse for disregarding individual personality, slighting a man's ability, regarding people as machinery and discriminating against them.

...People spend much of their lifetime at their workplace. It would be much more desirable to work in a pleasant place where humanity is paid due respect and where people feel their work has some real meaning. That is what Q-C Circle aims to achieve. ...A mechanized factory still requires control by a workshop of people. As people are driven by a desire to study more, they acquire an ability far beyond their previous expectations. It is doubtful whether the mechanism known as meritocracy, a system that rates people based on their current performance and already acquired ability, can draw out their hidden ability."

Unfortunately, many American companies seem to insist on the use of Q-C Circles simply as managerial fiat. The Japanese stress the impossibility of this approach. Instead, management must create positive conditions, and then the patience to allow effort and morale to grow naturally. The handbook goes on: "Circle activities should be so designed that morale is gradually elevated, or rather morale becomes elevated as a natural consequence of taking part in the activity. While it is an objective to create harmonious relations, the word 'create' should not be interpreted as doing something by force. Harmonious relations should bloom spontaneously as flowers do. It is a poor workshop where operators and foremen are considered to be part of the machinery and required to do a job specified by set standards. What constitutes a human being is the ability to think. A workshop should become a place where people can think and use their wisdom. It must be one of the objectives of Q-C Circle activities to develop this. Rather than disciplining operators to do the job strictly as they have been taught, is it not possible to make them think and ask questions whenever they face a problem? "Why allow them to improve or allow them to express their opinions or present information useful for improvement if the nature of improvement requires authorization and coordination above the workshop level?"

Again, there must be sharing of regard with employees, if the underlying concept of equal participation and sharing is to have meaning. "One of the strong desires of working people is to earn a better income. **Q-C Circle objectives naturally include increasing income. The Theory goes that as a pie gets larger, so does the individual shares of that pie. Q-C Circle activities boost company profits and eventually increase income of those people who contributed through Q-C Circle activities to the increased earning power."**

**In a sense, the objective of Q-C Circle is to permit every employee to be a planner and an engineer as well as a worker.** "The function of engineers differs according to ability, status, customs, and their relations with the workshop. In the United States, for example, engineers formulate standards, while operators in the workshop implement the standards faithfully. The engineers' function is separated from that of the workshop and a gap exists between the two. It is true that Q-C Circle activities aim at freeing engineers from the workshop so that they can devote their time to more constructive work. So for best results measures must be taken to keep them in close contact with Q-C Circles."

Underlying messages are many, but they are not overwhelming. Perhaps the **first message to the United States is that a firm can realize the full potential of its employees only if it both invests in their training and then shares with them the power to influence decisions.** Without training, the invitation to participate in decision making will lead only to frustration and conflict. Without a sharing of decision-making power, an investment in training will be both frustrating and wasteful. That American firm that hopes to learn from the Japanese example need only to do that which the Japanese themselves have done. Just as they have studied the United States industrial system and have blended together the best aspects of both, so we must do the same.

Of course, a successful implementation of the Q-C Circle in an American company can take place only if middle and upper levels of management truly understand the conditions necessary for the success of the program, and support them. This in turn means that the executive groups must offer the kinds of long-run and cooperative incentives without which cooperation at lower levels will not occur. Thus, the Q-C Circle cannot be understood in isolation, but only as one part of a larger and more complex organizational system— and such a system as Theory Z offers.

## IV C - Appendix **The Q/C. Circle**

1. Professor Ouchi concurs with what we already know; that the Q.C. Circles were not the invention of the Japanese but the Americans. Describe the way the Japanese adapted the principles of W.E. Demings. How does it illustrate the "Japanese Mind" *(mode of learning)?*
2. What are the basic ingredients of a successful Q.C. Circle? What is the central goal of Q.C. Circles?
3. Why is the quality of "human capital" so important to smooth running of Q.C. Circles?
4. For the Q.C.Circle to function "harmony" must be created between workers, foreman and manager. Remember the Japanese art of communication.
5. In the U.S. the tendency is to stratify employees— workers on the line, engineers upstairs figuring out ways to improve the assembly line. Why is this contrary to the Japanese method?
6. The Q.C. Circle also reflects the collective incentive discussed previously. What is the **pay-off** for the worker as Q.C. Circle participant?

### Activity Ideas #1

Isolate and list certain Japanese practices that are dominant factors in the "Japanese Model".

Samples:

1. lifetime employment
2. bonus compensation
3. consensus decision making
4. non-specialized career paths
5. 10-year apprenticeship

Then invite an American manager or managers in various sectors *(manufacturing, insurance, etc.)* to come to class and comment on those factors. Have the class isolate certain comparisons of modes of operation in the area of workplace incentives that can enhance productivity between the Japanese way of operation and the managers' own perspective in theory or practice.

### Activity Ideas #2

Consider the entire theme of **incentive** in the "Japanese Model". What theme dominates the structural incentive system that makes individuals more productive in the workplace? Is it...

A. security for the individual,
B. loyalty to the group,
C. freedom for the individual,
D. sense of belonging?

### Activity Ideas #3

Isolate one factor in the productivity puzzle, i.e., **"learning curves"**. Have the class extract as many tendencies in the "Japanese Model" that would tend to accelerate those curves.

Others:

1. long/short range decision making
2. investment strategy

## Section IV D ● Counter Review of the Japanese Model

**Goals:**

1. To understand some human **"side-effects"** involved in the Japanese Model
   a. Loss of individuality— super conformity— condemning the misfit
   b. Job stress
   c. One-dimensional union organizations
   d. Dual-class employment system
   e. Lifetime employment in a slow-growth economy
   f. The "greying" of Japan

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## Negative "Side Effects" of the Japanese Way of Organizing

### A. Loss of Individuality - Super Conformity

In Japan the deviant in a group can be isolated, ridiculed, ignored and banished, as in a traditional village society. In the company as a "village" as some scholars have characterized it, it is particularly difficult for the deviant to stand against the group or for a creative "misfit" to gain the kind of support he or she may gain in the U.S.[31] There are few opportunities for individuals to change their place of work. One who does not get into a place of work that they and their family considered desirable suffers from an enormous sense of failure. School youth with limited options open to them can be made to feel miserable if they do not achieve the desired goal. Suicide rates are high amongst youth. Japanese are not totally void of opportunities should they wish to change jobs and leave, but given the benefit and security losses most see little option but to endure. Those who might be able to start a new life under different surroundings find it is too late to change.

Those not valued highly by their peers or superiors have no place to turn. They remain, without satisfaction until retirement.

The social pressure of the work environment can create some odd behaviors, even outside the company. Professor Ouchi tells of one such example:

**QUOTE D-2**

> A student of mine from Japan told me the story of his good friend who worked at just such a major bank and had been kept exceptionally late at work for a period of months in order to complete a major project. When the project was complete, the section chief sent the staff home early every day for a week. After two days of coming home in the afternoon, the young man was confronted by his mother, with whom he lived. "Please," she asked him, "go to a bar, go play **pachinko**, but don't come home so early. The neighbors are stopping me on the sidewalk to ask whether you are having troubles at work, and it is embarrassing to have to explain to everyone." Again, it is not a system that we wish to emulate, but one we wish to understand and from which we can learn.[32]

There exists many further examples of side effects to this social work environment. For example, many managers in Japan regard overseas assignment as a penalty in their career development. They fear in their absence that the group will lose sight of them and they will be in some way overlooked when they return. This is not unlike a youngster's fear of being away from school too long lest it result in loss of position in the social group at school.

P.B.S. Broadcasting's **"Frontline"** put together a journalistic critique of Nissan Corporation's organization of its workforce entitled **"We Are Driven"**. At the time, Nissan was opening one of the largest foreign owned firms in America, a Datsun assembly plant at Smyrna, Tennessee. Frontline set out to look at "Nissan's Model" of organizing the work place. Masao Kayama, a journalist on the labor scene in Japan, argued that the "group ethic" set forward by the Japanese model evades the fact of a serious side effect, the loss of individual expression. Kayama explains how the **Q-C Circle** is a case in point:

**QUOTE E-2**

> Critics inside Japan agree that this well-publicized enthusiasm of the Japanese worker is not spontaneous but coerced. In these well-publicized Q-C Circles workers suggest how they can make themselves more productive. Even though Q-C Circles take place on Japanese workers' spare time, they are not entirely voluntary. Nissan sets a monthly quota of good ideas for its workers. Workers must impress the foreman of their loyalty say critics. That is why they do morning exercises, extra unpaid work in their spare time, etc. The foremen help to determine the workers wages and do not always get equal pay for equal work. The loyalty that they show is a factor in how much they earn.[33]

What are the implied productivity losses: they are opportunities for individuals to be productive sacrificed because of the preoccupation to please the group. **"The protruding nail gets hammered down"**, a phrase used by many Japanese, we will explore further... particularly in Section #5.

Masao Kayama supports the notion of the "tyranny of the group" that management uses to put individuals into line. In capitalism, we are motivated by the "carrot" rather than the "stick". Kayama sees Japanese workers' incentive structure based on the "less tasty" incentive option. He argues:

**QUOTE F-2**

"Japanese management has a good reputation in the U.S. but it is a family style, feudalistic system. As children will obey their parents without question, so workers will obey their bosses. The authoritarian hierarchy demands obedience. This side of things is downplayed, it is serious problem. The good side is advertised while the dark side is ignored."

*Small groups work together in a buddy system. Obviously they don't want to let them down. To avoid that they will put in extra effort. Critics say Nissan uses this peer pressure to drive workers to the limit.

"Because you are part of a group you are made to feel that you should do nothing to cause trouble for the group. If you are injured on the job you won't report it because that would reflect badly on your colleagues, your group leader, and your foreman. Even if you are sick you suffer in silence, you don't take the day off. You don't even take the vacations you are entitled to."

Kayama's visit to a Chrysler assembly plant in Detroit resulted in a positive reaction.

**QUOTE G-2**

"I visited Chrysler plant in Detroit recently. What struck me was that the workers can wear what they want and behave as they choose. They come to work in an atmosphere of freedom. In Japan all the workers wear uniforms, they work flat out every minute, every second. They seem stranded. By contrast, at Chrysler the worker seemed relaxed and untroubled. Under Japanese management system production takes place in groups. Japan's industrial growth was based on this. The individual and his opinions count for nothing. This is what Japanese management is all about."[35]

**B. Excessive Job Stress**

The following are some quotes from Nissan workers about the excessive pressure the Japanese exert on their workers. It is evident that in a system that gives security for life, yet limits mobility between jobs, the expectations of each individual's performance could, during tough competitive times that the company faces, become quite excessive. Emotional loyalty as well as explicit loyalty is expected. Disgruntled Nissan workers on "Frontline" explain:

**QUOTE H-2**

"Nissan operates on a system on mandatory overtime. At the end of every eight hour shift we must work one hour of overtime."

*Ten minutes before work starts a gong sounds. The workers must lay out tools and spare parts on their own time, because the company has paid its workforce for the absolute minimum.

"We have really begun to feel the cutbacks."

*Nissan has eliminated relief workers. People are discouraged from taking sick leave or whole vacations and the rate of work is stepped up all the time.

"They put a more efficient machine on my line. It didn't change the actual work I do but what I did in 23 seconds I now have to do in 15 seconds. It is getting hard to keep up."

*Nissan analyzes work down to seconds. The result is to eliminate even a pause for breath; to eliminate wasted motion in a nine-hour day.

"Now if you drop a bolt, you do not have time to pick it up."

*Ten years worker productivity has increased 70%, but at Nissan industrial robots have brought no relief.

"Robots know no fatigue and work incessantly. We must adjust ourselves to keep up with them and our work rate has increased dramatically. Things are getting bad."[36]

It is not surprising that workers anywhere in the world would complain about the rigors of labor. What is surprising is the risk these Nissan workers took in openly expressing what they saw many other workers fearful of expressing... that productivity gains extracted from their labor have human limits.

John Junkerman, a U.S journalist, spent six months touring Japan, Junkerman refers to the psychic pressures that many workers and managers feel by terming it a **"Q-C Neurosis"**. Junkerman points out:

**QUOTE I-2**

Pressures to perform, well documented in education, also exist according to Junkerman, on the shop floor. While one third of fourth graders sampled and three-fourths of ninth graders sampled complained of fatigue in their daily lives, the psychic costs continue into the pressures of peoples' working lives in Japan. Junkerman explains further:

The psychic costs continue into people's working lives: the quality control fever that has infected most Japanese enterprises has given birth to a new psychological disorder, "Q-C neurosis." At the Toyota auto company, workers tell of an employee who committed suicide when he could not come up with an efficiency suggestion to present to his group. Another Toyota worker compiled an award-winning record of sixty suggestions per month until he ran out of ideas and suffered a nervous breakdown. At last report, he was sending meaningless suggestions to his boss from his bed in a psychiatric ward.[37]

### C. One Dimensional Union Organizations

The whole subject of union organization in Japan is a puzzling one to an American who has grown up to believe that either you're in a union or not, or that a union represents worker's collective interests. Both of these assumptions are difficult to carry over to Japan's union movement. Perhaps it's because Westerners are two dimensional... adversarial; that is, two opposites *(i.e. management and labor)* each maximizing their own contradictory interests battle *(or negotiate)*. The result of that "civilized" combat is a contract protecting workers and a union to defend that contract. Some of the strongest *(traditional western trade unions)* are in the public sector *(teachers for example make up the most radical union in Japan according to many)*. In the lifetime system as we know, labor unions appear redundant. With a large percent of compensation coming in bonuses resulting in shares of company revenue, why burden management with demands. It would be like one hand negotiating against the other. Yet Ichiro Sago, an industrial sociologist at the University of Tokoyo argues that Nissan's management openly collaborates with the Nissan union. He argues:

**QUOTE J-2**

Union officials are first to be promoted to company foreman. Nissan regularly assigns junior managers to a period of service in the union. Few union workers dare to speak out against it.

"Candidates for union election are chosen by a committee. Former union officials are members of this committee, although that is not what is written in the by-laws. This is where the company and the union decide who should hold positions in the union. This is why most of the positions are held by company supervisors. For example, the shop steward, the lowest position in the union, is usually a company sub foreman and the shop delegate is usually a foreman. The union and management are so intermeshed it is impossible for just any worker to become a union officer."

It is the job of the union to do for management what it cannot do. Discipline discontents! Critics say Shiogi's (Nissan Personnel Manager) union is effectively a company police force. But Shiogi points out that the welfare of his workers depends on the welfare of the company and anyone who rocks the boat is a threat to all. It is not surprising that dissent is muted.

"The union votes are always 100% in support of union. This report shows that the eligible voters, the votes cast, the votes in favor are all the same. Not one opposing vote. I think Europeans, Americans may find this hard to believe. There cannot be really unanimous support. But in Japan nothing less than **total** support will do."[38]

Admittedly, this is just one company, Nissan Corporation. If companies like people have personalities that vary, as they do in the U.S, then concentrating on Nissan may be unfair. Yet, two items make it perhaps justified. 1) To get any Japanese worker or company to document discontent is very difficult because of the very factors mentioned and 2) Japan is a much more homogenous society and companies, according to their strata, may differ much less than we may be used to in the U.S *(at least within the 35% - manufacturing - lifetime employment strata)*.

### D. A Dual Class Employment System

Japan's system of lifetime employment may be in trouble, particularly in "satellite companies". It is argued by many like the esteemed British Journal **The Economist,** that because the lifetime system is for the **upper 1/3** of the Japanese workforce, recessionary contractions in the economy fall most heavily on "satellite" firms outside the large "hub" corporations. These suppliers, wholesale and retail distributors with 2/3's of the workforce must suffer disproportionate cutbacks, **The Economist** argues in a special edition devoted to Japan.

**QUOTE K-2**

It is true, too, that paternalism has kept many others in employment in Japan who would be out on the streets elsewhere. In 1980, the labor ministry reckoned there were between 2m and 4m people on the payrolls of Japanese firms, but effectively without jobs. They were the **hidden employed.** While the country's economic growth surged by 10% or more annually, companies could afford to be compassionate. The humane way of dealing with employees too old or too slow to be retrained was to give them a uniform and tell them to stand smartly in reception. No longer. The recession has been forcing companies to unload much of their surplus labor. Those companies that are parts of bigger trading blocks have been able to move many of their unwanted workers to expanding parts of the group. Others have been steadily buying their middle-aged workers out with golden handshakes. Hitachi, Japan's top electrical equipment maker, is said to have axed 11,000 jobs from it once 88,000-strong payroll. So much for lifetime employment.

Actually, the Japanese system of lifetime employment applies to fewer than one in three people with regular jobs, that is, about 13m workers in big blue-chip firms. Some 28m more who work for smaller companies can be hired and fired at will. And it is these people who have been squeezed the most by the current recession. Many work for enterprises doing business solely on the sluggish home market. Others are employed by

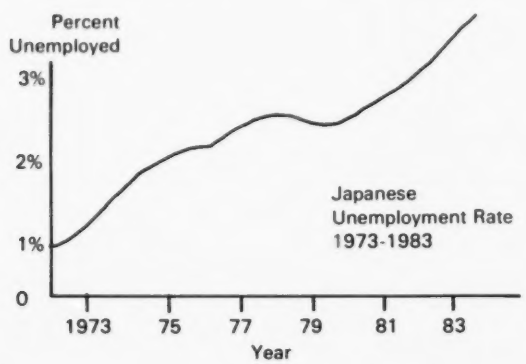
firms involved in sub-contract work for bigger manufacturers, who take the work back in house when times are hard; the motor manufacturers, Toyota and Nissan are cases in point. Both have weathered the economic storm remarkably well, but a number of their component suppliers are listing alarmingly.[39]

Japan's employment system could be typed as a dual-class system for another reason. The **role of women** as temporary employees has been explained. As our group toured Japan we got the impression that many very intelligent women are beginning to break with the dominant cultural patterns and seek careers as Western women seek them—as permament rather than temporary workers. The treatment of women as second class in the workplace was documented clearly for our group by a bright young interpreter with the Toyota Corporation. She explained to us between guided tours of the five enormous facilities that Toyota owns outside Nagoya, that as a top graduate from a state university, she had applied for and was accepted as a language specialist. Seven years later, she was still running guided tours for Western visitors and when we stopped for lunch, she became a waitress and hostess for our function. She explained the frustration of being subtly pressured to marry and have children as if her continual career-mindedness was a threat or an oddity to her male superiors. This story could have be repeated thousands of times as women in Japan are seen as temporary employees, even when they are given equal chances to compete in the educational meritocracy for leadership positions.

### E. Lifetime Employment in a Slow Growth Economy

**QUOTE L-2**

Japan has always had the image of a nation that as close as humanly possible, has maintained full employment. The record, however, may not be so rosy.




The Japan Ministry of Labor's definition of joblessness may be somewhat responsible for the low *(yet rising)* unemployment figures.

School-leavers and graduates waiting to find jobs are not included in the country's unemployment figures. Nor are people who work, effectively, for one hour or more in the last week of the month, let alone those helping out occasionally on a farm or in the family firm. Opposition politicians say that Japanese unemployment would be twice its present level *(that is 5-6%)* **if it were calculated according to the American definition.** That may be stretching the point a little, but it is nevertheless true that some eight million women in Japan are counted as if they are fully employed but have no regular jobs.[40]

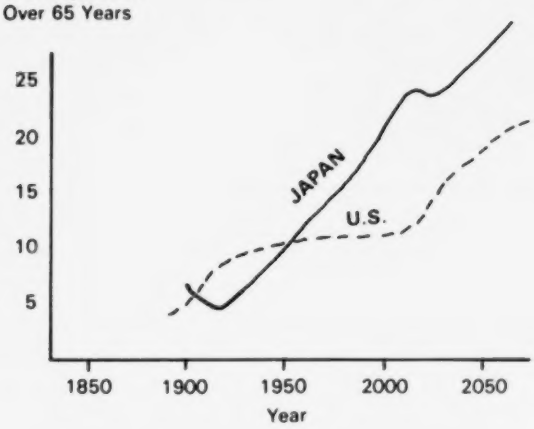
A number of economists in Japan are concerned about the ability or willingness of women and satellite firms to continue to take the employment pressure off the lifetime-employment firms. Professor Nukazama, the chief economist for **Keidandran** *(The Federation of Japanese Industries)* and the main political lobby for the "Zaibatsu" leaders, explained to our group that Japan's next 10 years will be slow to moderate growth with the workforce moving toward service and away from the manufacturing sector. Productivity gains have been achieved over 20 years in a system that allows manufacturing employees the time, the training and the security to "learn" how to be productive. As long as manufacturing grows at 10% per year, the lifetime guarantee can be honored. Professor Nukazama is not so hopeful in an economy which will see a contraction in manufacturing and an expansion in service trades. In the unstable market of services, labor in Japan may become much more like that of the U.S. The services market presents difficulties in achieving Economies of Scale or Steep Learning Curves. Japanese workers may have to market themselves, change companies or whole occupations to keep up with market trends.

### F. The Greying of Japan

Finally, as in Western countries, the system of private sector retirement in Japan is being challenged because of extended life-spans. This "Greying" trend in the population is acute in Japan because it is coupled with a) Lifetime employment retirement traditions at 55. b) A large savings rate which provides a capital pool for borrowing. c) A strict seniority wage system. **The Economist** further analyzes the dilemma.

## Document V • Trends to Labor Productivity

"The Greying of Japan", **The Economist**




The aging of Japanese society has been a subject that has been known to keep Japan's economic planners awake at night. Not only does the scenario threaten labor productivity and the lifetime employment schemes, but also the national savings rate, as economist Kaoru Yoshikawa sees it.

First, the assessment of a growing percentage of salary to finance pensions will cause workers' disposable income to level off. Next, since pensions will adequately provide for old aged people, workers will stop laying aside extra funds for retirement. This will cause the country's savings rate to go down. Moreover, the heavy pension burden will generate feelings of unfairness, undermining the will to work.

Should Mr. Yoshikawa's fears be realized, the long-term effect for Japan could mean slower economic growth, stagnation in labor productivity and a serious loss of industrial vitality. The obvious answer is to raise the mandatory retirement age *(which at present is between 55 and 60 years)* or raise the minimum age of drawing a pension *(which is currently set at 60 years)* or both. All easier said than done.

Solutions are bedevilled by Japan's seniority payment system. Older workers, though less productive, have to be paid more. Let them stay even longer on the job and their pensions will become that much more expensive to finance.[41]

**SECTION IV E ●** Organizing the Human Factor U.S. Style

Problems and Promises

**Goals:**

1. To discover what are some areas in which the U.S. is working on incentives to increase productivity.

2. To explore the following four areas that hinder U.S. productivity in the workplace.

   Fixed wage system despite business cycles
   Adversarial union
   Employment insecurity
   Short-term management decision making

---

### A. U.S. Success Story

It may be somewhat gratifying to know that the country that discovered and developed such innovations as Econometric Productivity Measurements and Quality Control Circles has had some identifiable productivity success at the micro *(company)* level. Romac Industries in Seattle, Washington, for example have brought worker incentives closely in tune with company performance:

### Quote-Case Study N-2

Romac Industries, a small, nonunion rubber-products manufacturer in Seattle, is trying a daring experiment to boost productivity: it is allowing workers to propose wage hikes for themselves, subject to the approval by vote, of their peers. Meanwhile, managers keep close track of the plant's efficiency rating. If a week's rating falls below the average for the previous four weeks, there is a moratorium on raises. If it exceeds the standard, the workers can choose between paid time off and a period of work at double pay. So far, the six-year-old experiment has paid off: Romac's management has never felt compelled to veto a raise.[42]

A Los Angeles based defense contractor, Northrop Aircraft Corporation has found that the application of Q-C Circles to the quality increases the productivity of their product.

### Quote-Case Study O-2

A Q-C Circle at Northrop was troubled because bits used to drill holes in titanium for F-5 fighter planes kept breaking. Solution: change the drilling angle and specify bits made from harder steel. The proposal saved Northrop $70,000 in lost time. Northrop passes on 10% of any dollar savings to the Q-C Circle that comes up with the suggestions, leaving the distribution of the funds up to the circle members. "What we are really appealing to is peoples' desire for recognition by their peers," says Phil Shapiro, Q-C Coordinator at the company.[43]

New Core Steel, U.S based small steel firm, claims that it can out-produce vaunted Japanese steel combines, and has proven it by taking away some Japanese steel markets in the U.S in recent years. It's secret according to its President:

### Quote-Case Study P-2

1.) Build small plants efficiently and cheaply.

2.) Run the plant based on workers' incentive systems.

3.) Invest heavily in modernized technology.

4.) Plows back profits into the company.

Our production workers work on a production incentive system. Groups of 30 that are doing a complete task set a standard based on the previous week and receive pay based on exceeding that standard. It is not unusual to see the bonuses run over 100%. No maximum on it. The average yearly salary is between $22,000 - $35,000. The job is tough, but the money is great. We never change the standard.

Many corporate executives are willing to give lip service to the idea that "if a man makes twice as much, I will pay him twice as much", claims the New Core Steel President, "but if he does, they will say that the standard was wrong or he cheated or he will bring a consultant to say it for him."[44]

The Japanese had in 1980 over 200 firms operating in the U.S., using U.S. workers. Mitsushita Corporation purchased a television assembly plant from Motorola, a U.S firm in 1978. The change in the quality of the product using the same U.S. workers, but with some slight "Japanese" *(or recycled American)* workplace adjustments was astounding!

### Quote-Case Study Q-2

Under Motorola, there were 150 defects for every 100 T.V. sets. Under Mitsushita, there were four defects for every 100 sets. Under Motorola, the workers had to walk to keep up with the set. That caused mistakes, Mitsushita made a new assembly line to allow workers to stop the line. They didn't have to chase the set to work on it.The workers making Quasar sets for Mitsushita are the same that made the Motorola sets.

Some new machines were put on the line to speed up the manufacturing of circuit boards. Production workers became more involved. Each line meets once a week with a foreman. Wanting to deal directly with people, even though not Q-C Circles, Mitsushita believes this is more in tune with Japan.[45]

The point is raised quite often; is the difference between U.S. and Japan in productivity accounted for because we have an inferior workforce? Section #5 on "Human Capital", the education of a workforce will try to deal with that difficult issue. Yet, it is said time and again, that given the same

equipment and incentives, the U.S worker is not somehow "lazier" or inherently less competent than Japanese workers. However, a University of Michigan Institute for Social Research study found that when U.S. workers were asked "how much time they spent working" the response was "the actual numbers of hours worked is always lower than the average number of hours being paid for". Furthermore, the study argues that the gap between hours worked and hours reported for pay is widening; in 1965, a 5% disparity, in 1975, a 15% disparity.[46]

We seem to have established that the U.S has had success in cases where the company has instituted incentives, *(i.e. compensation)* tied closely to company performance. This is not a revolutionary discovery. The issue is: what is in the way? What are the road blocks to American firms more readily adapting what Japan has done, and their own research confirms, to bring workers more closely in line with company performance? These road blocks may be combinations of:

1.) A fixed wage system
2.) Adversarial unions
3.) Employment insecurity
4.) Short-term management incentives

### Fixed Wage System

Current wage setting procedures make it both difficult to stop inflation and encourage productivity growth. Our tradition of fixing wages to "cost of living" indicators, makes it difficult **not** to confirm last year's price increase with more inflation in the current year. The shock of the Arab Oil Embargos— 1973 and 1979 is an example. If Americans must pay more for oil, there is less of the GNP to be divided and our standard of living must fall. Yet Americans tend to respond to a 10% price shock (1973) with a demand for 10% more in wages. Such a fixed wage system out of inflationary fears confirms inflation as a fact. No one wants their incomes to fall... it is understandable. Yet as Lester Thurow argues, fixed wages, contracted over a fixed contractual time also do something else.

### QUOTE R-2

With fixed wages individual workers also have **little incentive to cooperate with management** or to take the initiative in suggesting new ideas for raising productivity. At the level of the individual worker, higher productivity has no immediate payoff when wages are fixed for the length of the contract. The immediate effect of higher productivity is, in fact, negative. Less labor is needed, and the probability of layoffs rises.

In the long run higher productivity permits higher wages, but this long-run effect is often discounted by the individual worker. He may have left the company before the higher wages are paid or the extra productivity may be used to pay someone else. The higher productivity growth rates of the Japanese may also be due to their bonus system that encourages labor to take a direct interest in raising productivity.[47]

Thurow suggests that fixed wages, negotiated over fixed periods, be replaced with a **"Value Added"** concept of compensation. Not enthusiastic with the manipulations of profit accounting by U.S. firms, he believes that the **"Value Added Concept"** is superior to simple **"Profit Sharing"**. Profit sharing is tacitly practiced by many corporations as a way to bring workers more in line with company performance. His evaluation:

### QUOTE S-2

Profit sharing is one answer, but it suffers from some drawbacks. Profits depend upon so many items that are outside of the control of labor— interest rates, foreign competition, national economic policies— that labor sees little connection between its efforts to raise productivity and the bonuses received. As a result the American experience with profit sharing has not generally been favorable.

Profits are also **a slippery concept** where management has a lot of freedom to maneuver with its bookkeeping. The new accelerated depreciation charges just enacted by the Reagan Administration could, for example, be used to reduce reported profits. A clever bookkeeper can make profits appear in this subsidiary. To a worker, profits are too much under the control of management.

Value Added: The solution is to **find some measure** of firm performance that more directly relates to productivity and is less subject to bookkeeping conventions. The answer is to set wages based on a firm's "value added". Value added differs from gross revenue in that the costs of materials are subtracted from the gross revenue to yield the value added. Since value added directly depends upon productivity— the more output per hour of work, the higher the value added of each worker— labor has a direct incentive to help raise productivity.

Inflationary problems are also avoided if wages are tied to value added rather than gross revenue. Wages do not automatically go up as they would with gross revenue when the costs of materials, such as oil, go up. Tying wages to gross revenue would lead every material price increase to be doubly inflationary since it would raise wages as well as material costs.

In 1981 the employee conpensation— a measure that includes fringe benefits such as pensions and health insurance as well as cash wages— accounted for 61 percent of the nation's value added. If labor had negotiated an agreement where it got 61 percent of the nation's value added, the 61 percent of any increase in productivity would have gone to labor and 39 percent to capital.

If this had been done, productivity might be rising rather than falling.[48]

**Adversarial Unions**

Recently Hajime Ohto, a Japanese businessman spending a year as the U.S.-Japan Trade Council in Washington remarked:

**QUOTE T-2**

> "Perhaps you can explain these figures to me; I see that the highest industrial wages over the last ten years have been for steel workers. Their industry is doing very badly. The second highest are the auto workers. I do not understand how they enjoy that advantage when their industries are suffering. I do not feel quite comfortable looking at figures like these."[49] • •

Perhaps our visitor with his bias toward the one-dimensional nature of the Japanese Company Union does not understand the long struggle of steel workers to establish their standard of living over nearly a century of battle. In the U.S a steel union's first reply would be based on "class war" principles. They are defending all labor, setting standards that protect textile workers or those who clean motels, for example, with a minimum wage. Whether it's feather bedding on railroads, artificially low workloads in construction, etc. unions do share responsibility for our productivity crisis:

**QUOTE U-2**

> In New York City the Transit Authority agrees not to hire part-time bus drivers, which means it must hire one full-time bus driver to cover the morning rush hour, or go into costly overtime. The result: growing non-union competition in construction and the airlines, or higher costs and declining service on the transit line, or inroads by foreign competitors in autos and steel.
>
> However, unions do not dictate; it takes two parties to make a union contract, workers and management. Smaller businessmen and manufacturers frequently curse General Motors and the steel and construction industries for surrendering to the unions on terms that smaller fellows cannot afford. Surrendering may have avoided some costly strikes, but in the end the piper had to be paid. General Motors itself is saddled with labor costs that make it difficult for it to compete with the Japanese— labor costs that are going to penalize profitability for years to come.
>
> Why? One reason is that the union plants generally tend to be older larger factories, while the non-union operations are newer and smaller. But managers admit that **without a union plant the managers pay more attention to the workers and plant problems.** At union locations, "we stopped dealing with employees directly. Employee understanding of the business deteriorated."[50]

The implication is that management has bought the adversarial line. The union represents the worker, so management is void of responsibility of communicating with the worker in any manner except those dictated "in the contract". Thus, the union has allowed the manager to abdicate any relationship with labor that would bring the worker's incentive structure more closely in line with company performance and productivity.

An experience at Polaroid Corporation is illustrative. Polaroid knew that productivity increases when workers have a larger say over their lives and feel more satisfied with their work. So, a worker self-management program was instituted. However, Polaroid scrapped it's self-management program when it became clear that **"workers did not need managers to tell them what to do".** By calling into question top-down decision making these experiments threatened the ability of managers to control the shop floor.[51]

However, despite that charge, companies like General Motors have seen that when the old "class war" between management and labor is set aside, productivity and profit does increase.

**QUOTE V-2**

> The company began a "quality of work life" program six years ago. As union members were invited to provide more than brute labor, their commitment transformed the atmosphere of the plant. Grievances against management fell from 2000 to 30, and absenteeism from 7 percent to 2.5. Now Tarrytown is one of GM's success stories, its lines running full-blast to produce the X-body cars. Similar stories can be told in the aluminum, steel and machine tool industries.[52]

A steel union chief reflected on the structural changes going on between management and labor in America today. He is not sure the old "class war" makes sense... if it doesn't, perhaps the union movement in the U.S. is about to change radically.

**QUOTE W-2**

"I don't feel that the process of relations among labor, management, and government is very well adapted to the world we live in now, as opposed to that of the 1930's and 1940's", says James Smith of the Steel Workers, reflecting the thoughts going through many minds. "A great deal of the sloganized, adversarial relationship is built into our ways of thinking, is instituted in law and in our grievance procedures. It is based on philosophy of a contest for splitting the pie between workers and owners. But we've shifted from a structure where they're the idle-old through the pension funds. **I'm not sure the old class war makes sense as we move toward an economy where the split is between the employed and the retired."**[53]

### Employment Insecurity

If unions have been self-seeking, wage-inflating monsters, they have also been the last line of protection for most unionized workers, in an employment marketplace that assumes that the insecure worker *(anxious about the pink slip)* will be the best motivated. A high-quality, well-motivated work force interested in raising productivity is ultimately a management responsibility. New labor-saving machines that lead to improvements in productivity typically mean layoffs in most American firms. Who is going to work to raise productivity if it means that they or their friends are going to be fired? In 1980, labor-force turnover averaged 4 percent per month in American manufacturing.[54] Who can build a high quality work force interested in the long-run prosperity of the firm when almost 50 percent of the labor force quits or is laid off every year?

### Short Term Management Perspectives

When American industries first started to fall behind their foreign competitors, the phenomenon was dismissed as bad luck. The steel industry was caught in a shift to oxygen furnaces or consumer electronics just happened to miss the significance of the transistor. But, as the list began to grow in textiles and with the big embarrassment in autos, it became obvious. Something was wrong with American management. We have established that American managers have been unable to generate an environment where the workforce takes a direct interest in raising productivity by giving incentives for them to do so. Yet, if productivity on the shop floor is to be gained through the time and patience necessary to work learning curves in a cooperative fashion, then management time horizons simply cannot be so short. Why has U.S Management erred here? First, the fault may lie in management environment where it is only logical for everyone to look only to the short-term. Lester Thurow, a Professor in the M.I.T. Management School explains that:

**QUOTE X-2**

The chief executive office of every firm is worried about quarterly profits lest the financial markets saddle him with a low stock-market value and a hostile takeover bid aimed at eliminating his job. CEOs also typically get a bonus, based on current profits, that will end up being a substantial fraction of their own lifetime income, but they are typically CEOs for only five to six years. What short-term CEO will take a long-run view when it lowers his own income? Only a saint, there aren't very many saints.[55]

Two sources of short-term horizons appear here: 1) Manager's fear of stockholders' day-to-day interest in earnings. 2) Managers own short-term compensation. In the instance of the latter, we can compare our practice with the way managers are compensated in Japan. In Japan, bonuses of managers are tied closely to production quotas in comparison to their own production cost demands. In other words, **they receive bonuses directly related to the productivity performance of their companies.** Also, managers who retire may still receive bonuses many years after they leave the company based on decisions they made 10 or 20 years earlier. This is another incentive to look to the long-term when making decisions. Furthermore, it is estimated that the difference between blue-collar and white-collar salaries in the typical Japanese company are about 1/3 as large as the difference on average in the U.S. company. James Fallows, in a lucid analysis of U.S. management explains how during the low point in the proud history of the U.S. auto industry (1979) the Wall Street Journal reported that in "accord with President Carter's anti-inflation program, GM was going to hold down their executives compensation." CEO Thomas Murphy was to receive "only" $941,667 and Roger Smith $801,667. The top management salary in Japan— the CEO at Nissan made in the same year $140,000. Fallows continues:

**QUOTE Y-2**

Perhaps more significant is the way the executives are compensated. Many companies follow the practice of the auto industry, in which executives are given substantial bonuses in profitable years. In theory, the bonuses reward those who have been

pulling their weight. "You have to understand the way these bonuses really work," says Andrew Court. "So much of the business is done internally that the profit and loss for each division depends mainly on the 'transfer prices'. The financial staff sets the transfer prices, and those determine everyone's bonuses. That is why the financial staff has become so dominant, especially at GM". Several years back, two GM plants were producing virtually identical automatic transmissions. The Chevrolet transmission plant "sold"directly to the Chevrolet division; the Hydramatic plant sold to Oldsmobile, Cadillac, and other divisions including Chevy. The transfer price for the Chevy transmission was $130, Hydramatic's was $185. Actual production costs at the Chevrolet plant were $7 less per transmission than at Hydramatic, but the way the financial staff allocated the profits meant astronomical bonuses for the Hydramatic officials. One year, Hydramatic's manager received $250,000 in salary and bonuses. The manager of the Chevrolet plant got $80,000 for doing exactly the same thing, and doing it more efficiently.[57]

However, it may be the pressure to make the immediate profit that mostly distorts managers' perspectives. In a significant case example we can explore the problem. The U.S. auto industry 1970-1980 was caught in a spectacular misreading of market signals. Why did management continue to allow the production of large gas guzzling autos when the consumer was sent reeling by two gasoline price shocks - 1973 and 1979. James Fallows cites an insiders account of the sources of the debacle.

### QUOTE Z-2

Perhaps every incentive in the business encouraged the manufacturers to milk the big cars for all they are worth. Alfred P. Sloan's autobiography, **My Years With General Motors**, lays out the theory of a scale of GM products approximately the scale of American life. As a man moved from Chevrolet to Cadillac; and as he bore himself upward, he would also buy GM. John DeLorean has said that, in his time at GM, it cost the company only $300 more to build a Cadillac Coupe DeVille than a Chevrolet Caprice, but the sticker price on the Cadillac was $3,800 more. The difference was pure profit. Concentrating on the big-ticket items made GM the richest company in pre-OPEC history and established a standard that Ford and Chrysler thought they should imitate. The chief economist for Ford, John Deaver, explained the continuing application of this theory in the summer of 1978, when he answered Senator Frank Church's questions about the small car, the Pinto, Ford had built to meet federal fuel-economy standards:

Church: "You are only producing as many Pintos as are required to make the average mileage for the entire fleet of cars, from Lincoln to the Pinto, comply with the law. Isn't that correct?... You really make your money on the big cars, don't you?

Deaver: "Yes; essentially."

Church: "So, to keep those Lincolns out there, you have to produce a certain number of Pintos because of the mileage you get on the Lincoln."

Deaver testified as part of the effort to get the fuel-economy standards loosened. The irony of such resistance is that, eighteen months after Deaver's appearance, the only cars selling were the kind required by the law. "They've been legislated into prosperity again," says Andrew Court, who was for twenty-five years the General Motors staff economist. "If it hadn't been for the regulations, there'd be no Omnis and Horizons," says Douglas Fraser, listing the models that are providing such income as Detroit now enjoys.[58]

Whether or not U.S. auto firms were saved by government regulations or not, is conjecture. What is clear is that the source of management's lack of response was the reliance on a distorted view of the consuming public; a view that had built their profit margins and returned dividends to stockholders for decades. When the market changed they didn't!

Senator Lloyd Bentsen of Texas, a former president of an insurance company, at a Harvard conference on competitiveness and productivity said that the measure of achievement for U.S managers is as short-term as a politician's. Like a politician's constant concern about re-election, bonuses, salaries and promotions for managers are too dependent on this year's profits over last year's.[49] Julian Scheer, Senior Vice President of the LTV Corporation says:

### QUOTE A-3

"In a number of our biggest companies, you have men who have risen for years through the ranks, and then have a very short stewardship as chief executive officers. They try to deal with long-range problems in the short term. They want to demonstrate to their directors, their stockholders, and the financial community that this year's rate of growth is as projected, that they'll meet this year's target this year. What gets lost is the strategy that will take the company over twenty-five or thirty years."[59]

Senator Bentsen concurs:

**QUOTE B-3**

> The imperatives of the financial markets further intensify the short-run pressure. "Today's financial measurements are biased against the long term," Bentsen said at Harvard. "When you want to make this year's annual report look as good as possible, why engage in market entry pricing in East Asia? Why accept losses for two or three years to build volume and brand recognition? I can assure you that our competition in the world of trade is more than ready to make market investments that may not pay off for a decade. They are willing to spend years positioning themselves to conquer global markets."[60]

If managers, like workers, respond to logical incentives the solutions are clear. Simply change the incentive structure to longer-term horizons. Boards of directors should stop giving CEOs bonuses based on profits, and start giving bonuses on the earnings of the firm in 10 years. Or give bonuses in the fashion of the Japanese, based on productivity rather than profit. If then, CEOs began to turn to longer time horizons, the financial markets may think in the same terms, releasing their own immediate anxieties and thus those of the management. That is, of course, easier said than done. The Japanese, with new companies not turning profit on the average until almost 20 years after their inception, provide the model for this long-range thinking. The key to that long-range perspective, however, remains the long-term contractual debt financing at reasonable interest rates as the major source of capital. Our own reliance on equity financing in the corporate circles will make long-range management perspectives more difficult.

## SECTION V

## Exploring "Human Capital"

**"The Japanese Style of Educating a Productive Workforce"**

**Goals:**

A. Understand what is meant by the term "human capital?

B. To respond to the question: Are the Japanese educating a better worker or manager?

C. **"The protruding nail is hammered down"** - To gain a perspective on the link between the Japanese firm and Japanese schools.

D. To explore some "side effects to the Japanese educational system?

1. Lack of creativity, individuality, research
2. Weak university fears
3. Limits of exam system based purely on merit *(egalitarian meritocracy)*
4. Homogeneous, standardized curriculum

E. The "continuing education" of the Japanese manager.

### Exploring the Creation of "Human Capital"

#### A. What Do We Mean by the Term "Human Capital"?

We must go beyond the simple measurement of expenditure per pupil in comparing the preparation of a workforce within the dominant education institutions in Japan and those in the U.S. Japan's classroom's have more pupils per instructor than do those in the U.S. As a percent of gross national product, the U.S. already slighly exceeds the Japanese resources aimed at education. But we must obviously go further. Productivity throughout the decades has been enhanced by "human capital". That is, the growing quality of labor input. The single most significant ingredient in the progress of that development is education. The assumption is that the more educated a workforce, the more efficient the industrial process. It is simple, the higher the quality of the learning of the workforce, the steeper the learning curve. Consider a study by Ferenc Janossy, a Hungarian economist.

**Quote C-3**

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By human capital, we mean the skills and knowledge possessed by the labor force. Even though the measurement of human capital is fraught with difficulties, we cannot ignore this vital contributory element in labor productivity. Ferenc Janossy, a Hungarian economist, has suggested a vivid imaginary experiment to highlight the importance of skills and knowledge.

Suppose, he says, that the populations of two nations of the same size could be swapped overnight. Fifty million Englishmen would awake to find themselves in, say, Nepal, and 50 million

Nepalese would find themselves in England. The newly transferred Englishmen would have to contend with all the poverty and difficulties of the Nepalese economy. The newly transferred Nepalese would confront the riches of England. But the Englishmen would bring with them an immense reservoir of literacy, skills, discipline, and training, whereas the Nepalese would bring the very low levels of human capital that are characteristic of under-developed countries. Is there any doubt, asks Janossy, that growth rates in Nepal, with its new, skilled population, would soon rise dramatically, and that those of England would fall catastrophically?

One way of indicating in very general terms the rising amount of human capital is to trace the additions to the stock of education that the population embodies.[61]

## B. Are the Japanese Educating a Better Worker or Manager?

There is no question that our educational institutions provide greater academic freedom, stress a more varied curriculum and even may encourage much greater creative thought. Yet, as Professor Robert Christopher, a noted scholar on Japan and Japanese education and author of **The Japanese Mind**, points out:

### Quote D-3

Only one of scores of Japanese industrialists I know has ever been blunt enough to tell me openly that the workers in his U.S factories were more poorly educated than those in his Japanese factories. But that is nonetheless what most Japanese businessmen who are familiar with the American scene believe. In a survey that Tokyo's Nikko Research Center conducted among Japanese companies with U.S. operations, 65 percent of the respondents said that productivity in their American plants was lower than in their Japanese plants. And without exception they blamed that fact in large part on the inferior education and job skills of American workers.

That is a put-down that any loyal American will find hard to accept, and it is tempting to dismiss it as simply a product of Japanese chauvinism. But unhappily, the facts don't permit that. Estimates of the number of functional illiterates in the United States, for example, run as high as 20 percent of the population. Among Japanese— whose language is far harder to read and write than English— the estimated illiteracy is less than 1 percent.

The humiliating comparisons don't end there, either. In 1970, a U.N.-sponsored group administered a series of indentical science tests to 10- and 14-year old children in 19 countries. In both age groups, the Japanese youngsters tested, scored higher overall than children of any other nationality. American youngsters, sad to relate, ranked fifteenth in overall score— and there is no reason to believe those relative rankings have changed.[62]

## C. "The Protruding Nail is Hammered Down" *(The link between education and improving "human capital" - Japanese style.)*

The link between the Japanese firm, and "human capital" created by the Japanese educational system needs some final clarification. What is it that the schools in Japan set out to do?

First and foremost, they set out to create a high sense of **self-discipline** within the youngster. The key to self-discipline is more complex than simply instilling values of hard work, although Japanese students clearly work harder. If learning is measured on a quantitative level of fact retention and recitation, then the Japanese students show a greater disciplined capacity at mastering that than do our students. Comparing test results on purely subject matter makes them look very good. They score at every level higher in subject knowledge mastery. They may have no concept of why the subject matter is important, but they are well-disciplined to know it! However, self-discipline goes beyond hard intellectual work. It means a **discipline of self**— of the individual ego— to the Japanese child. The strict quantitatively measured exam-oriented curriculum is designed to provide the developing student a precise concept of individual achievement within the context of his or her peer group.

As early as 3 years old, Japanese students compete against peers for the scarcity of top spots. Such "a meritocracy" disciplines the student's ego in every subject area to progressively grasp "position" in comparison with others. This is based upon an equitable process appraisal of one's relative merit. Few are given special attention in Japanese schools through grade 9. The potentially "gifted" must receive the same education in the public schools at least, as the slower students. The exams will soon separate each student based upon their relative merit. There is little tracking, or individualized learning. A junior high school admitted to our visiting group that almost half their students cannot keep up with the pace of the assignments.

Yet they are pressed on up through the grade levels until exams separate them. It is very important that everyone receive an equal chance, as well as equal pressure. However, recently the egalitarian nature of the system has been challenged by the "Juku's" *(prep academies or tutorial after-hours schools).* These Juku's cost Japanese major portions of their income. The lower income folks cannot avail themselves of these exam-preparation opportunities as easily as the higher income families.

The curriculum is standardized throughout the country. It is said that some classes are on the same page on the same day as another teacher 100 miles away. The state can alter texts even within a given school year. This brings up a second major goal of Japanese schooling. Students learn what they are suppposed to learn and everyone is evaluated on the same task. That unified task identification is as important as developing the knowledge of where you stand in the group. The curriculum reflects bias toward disciplining the self rather than developing specific marketable skills. The subject areas are classic. There is no economics, no "intro to law" and no computer science. But ethics, interestingly enough, is mandatory, attesting to the greater interest in establishing Confucial values than in developing marketable skills. It was, however, the lack of critical thinking, creative methodology or interpretive skills that impressed our observers as we toured and interviewed in the Japanese schools. When a Japanese history teacher at a high school in Hiroshima, was questioned by one of our people about the difficulty of teaching Japanese foreign policy in the 1930s and 40s, his response was illustrative of the restrictive one-dimensional nature of instruction. The question was "how do you deal with the justification of your country's policy, what kind of value-oriented issues does it raise"? The response of the Japanese teacher was clear "we teach the facts," he said, "the battles, who won or lost and the outcomes — then we move on. For values we have an course in Ethics!" The message was clear, it was not the job of that teacher to relate meaning to Japan's history, or to open up to any student intellectual exploration. His job was simply to help the students pass the standardized exam in Japanese history. That exam, by the way, reflects content that is at the whim of the Japanese government. On more than one occasion, they have altered texts in mid-school year to reflect a political or idealogical swing.

Specific skills will be developed by the company in due time. Within the process of learning in school most negative tenants of individualism are eliminated. Those traits which are unacceptable to the Japanese mind, or to the Japanese firm include:

1. The aimlessness of an individual alienated from a clear understanding of where their merits are positioned relative to others.
2. The egocentric individual who believes that their own aggrandizement supercedes the group's.

**"The Protruding Nail is Hammered Down"**

This phrase is popular amongst both Japanese and American critics. We may see this idea through a pseudo-libertarian perspective as a version of "1984", yet most Japanese do not see it in an "Orwellian" light. After all, a protruding nail presents two hazards: first, it is a safety menace protruding ready to harm an unsuspecting member of the group. It is in much the same way as a self-aggrandizer in a company harms everyone by putting his or her interests above the commonweal. Secondly, a protruding nail is worthless. It is not doing the job it was designed to do. What good is a person who desires to be "their own man or woman" if it benefits no one else and is a hazard to the community besides?

The scarce top spots in the university are acheived by virtue of exam-based performance alone. Not family ties, teacher recommendations, activities, nor even good grades count— just the performance on the subject exams that measure achievement of nationwide standardized goals. Ironically, once into a selected university, Japanese students are not pressured to achieve on the same high order as in public schools. This is perhaps because the nation perceives the need for a period of rest from the grind. Or perhaps a chance to act out "fantasies of individual expression" is needed, *(student activism is very strong on many campuses... not necessarily a mark of individualism, however).* For whatever reason, Japanese universities instruct a curriculum far below the standards of American universities. This is true even for prestigious national universities, with possibly exceptions in the field of medicine and engineering. Yet when a company comes looking for a candidate in a

university they feel that simply being admitted, the candidate represents a potentially valuable employee. Top companies in the "Zaibatsu" then select from the "top national universities". Lower level companies select from lower level universities. Lastly 60% of non-university candidates, weeded out by the grade 12 exams will be picked up as blue-collar workers or move toward the satellite companies. Regardless of the company, all are looking for specific qualities in the candidate.

They are not looking for a particular skill so much as "latent capacity" in a self-disciplined, achievement-oriented individual who knows that their incentive structure is tied to the progress of the group.

With lifetime employment, a social contract is developed that allows both employee and company to mold their personality and develop their skills where the company believes they can best benefit the company. It is second nature for an employee to respond to the question "what do you do" with "I work for _____". The last kind of employee that the company wants in such a social contract is one who plans to use the company as a personal stepping stone to either higher salary or greater power. Thus, it is important that the company be more important than the particular position. The "self" is disciplined at an early age through the school to accept the dominance of the group. Students are taught to see oneself as a servant whose individual talents are to be molded for the group's institutional standardized will. In return, the group will advance you based upon your value to the commonweal.

Secondly, the discipline of the self is important for the Japanese company because it is essential in the concensus style of decision making. The tedious process of group decision making necessitates a restrained ego. The group's ego is set forward; the individual ego is set back. However, this does not restrain middle managers (age 25-40) from being the most productive group of idea initiators in the typical Japanese firm. They feel free to be open and unrestrained in their suggestions. They are listened to by their superiors, and they are expected to have knowledge of the whole productive process. These managers seem to, like school children, compete with one another for leadership. But unlike their American colleagues they succeed based on how well their superiors and their peers perceive they are serving the needs of the group, not their own needs. An ambitious manager would destroy his chances for advancement if he was seen to be advantaging his position at someone else's expense. The trick is to harness personal initiative or ambition in the school, orient personal rivalry more toward clear standardized tasks that measure everyone's value equitably. There is no room, and no time for petty "posturing", or "holding out" in personal rebellion against the task or the group in either the school or the company. Such a social organization necessitates a **well-disciplined self.** To Westerners, this may seem to take on a distasteful nature.

**D. What Are Some Side Effects of Japanese Education?**

Critics argue that the curriculum and particularly the rigid instructional mode of teaching in the Japanese schools puts a premium on rote memorization and regurgitation on standardized exams. This is accomplished at an extraordinary expense of creativity, individual initiative, innovation, inventiveness, analysis *(higher level learning).* Industrialists have been more than pleased to receive candidates for the workforce at all levels that are skilled in self-discipline, loyalty, the "latent capacity" to be molded by the company. Yet, some leading companies like Sony and others on the frontier of high tech exploration lament the "herd" tendencies of the Japanese. They instead desire someone who can think creatively even if some of the ideas are not acceptable to the group. Many young Japanese entrepreneurs admire American education that may not have standardized scores as high as the Japanese on concrete, fact-oriented exams. They have come to admire education that emphasizes student-centered exploration, laboratory experimentation in science, the scientific method of inquiry in Social Studies and the inter-disciplined study of the humanities and the arts. Some Japanese educators and businessmen admire these traits but it reflects a methodology of learning foreign to them.

In our schools local boards decide how much language *(multi-lingual),* and what kind of electives make the "liberal" education they wish their student to have. States have some control and American schools have always been the great vehicle in the "Americanization" of various ethnic groups. But, the standardization of what is taught and how it is taught is far more diverse than in Japan.

The Japanese will argue strongly that theirs is a pure merit educational system. They are proud that only skill counts on exams to determine mobility and that money, social standing is not a factor. Schools are for everyone, and everyone gets an equal chance to prove themselves *(egalitarian meritocracy).* They pointedly argue that success in America is based on education yet education can be bought. They point out America has schools for minorities that are much below the quality of schools in income-rich suburbs. They are right about that, of course, yet two things destroy their argument that their schools are purely egalitarian systems.

1. Although public schools are co-educational, parents tend not to encourage girls to aspire to the most prestigious departments and universities. The Japanese often wish to invest in sons that they believe will be more able to turn their degrees into good jobs and income security.

2. Many families are now spending tremendous sums of income on private tutors and private schools that only train students to pass the exams. Many parents pay up to 20% of monthly income for these "Juku's", starting at a very young age. While in 1961 almost 40% of the top national university students were from lower income families the percentage is dropping to less than 20% today. This is because parents with higher incomes can afford the extra "Juku" training *(often as early as 3 or 4 years of age),* and thus score better. So much for egalitarianism.

The Japanese have spoken often of the embarrassment of being a nation of "borrowers"; of "disciplined automatons" that apply other nation's inventions instead of being leaders in research and invention. For example, Thomas Rohlen, a consultant and research associate of Stanford University, anthropologist, and expert on Japanese culture concludes the following concerning Japanese education in his recent book on Japanese high schools.

**Quote E-3**

"The profoundly impressive fact is that Japan is shaping a whole population, workers as well as managers, to a standard yet inconceivable in the United States."

"Competition," says Rohlen, "is remarkably fierce, even for the average universities. No skill or subject not tested on a university entrance exam is ever studied. Students, for example, learn to read difficult English, but the spoken language is neglected. Teachers lecture from uniform textbooks that are the same across the country. Class discussions are almost non-existent. All clubs, sports, and extracurricular activities are subordinated to exam-oriented studying."

The system he says, makes students **"virtual informatic n junkies"**, but it doesn't teach them to evaluate facts, as well as absorb them. Diligence, outward conformity, and self-denial are virtues highly valued in Japanese education and culture. Initiative and individual brilliance are discouraged.

"There is no individual research done on the high school level, raising the question of whether Japan can shift from being a follower in research and development into being a world leader."

But, Rohlen warns, one of the most serious drawbacks in the Japanese system is its extreme conservatism: in order to change anything on an entrance examination, the entire national curriculum must be adjusted, from textbooks to teacher education.

"This," he says, "does not bode well for a future in which innovation will be very important."

Japanese high schools, he says, neglect some of the best parts of the nation's "humanistic tradition, a tradition rich in beauty, sensitivity and spirit." As a result, he says, "well-intended teachers and well-behaved students put their efforts to purposes that are ultimately shallow and uninspired."[66]

Two other shortcomings persist that relate to a cross-cultural performance comparison of education and productivity. Japan prides itself on being a homogenous population. Ethnic homogeneity in turn has a profound effect on the social values, customs, language, ethics, and subject matter taught. This is, of course, of a highly standardized nature. It is said that teachers in Math or English will be on the same page of the same text even though they are teaching in schools hundreds of miles apart.

Writer Edward Fiske observed the Japanese schools for many months and wrote in a four-part series done in July, 1983, for the New York Times that the greatest shortcoming of Japanese education is individual creativity.

### Quote F-3

A growing number of Japanese are also worrying about whether their education system is producing students with the imagination and critical thinking skills necessary for leadership in a sophisticated technological society.

Two years ago Tetsuko Kuroyanagi, a popular television personality had a book of recollections of her childhood published, entitled "Totto-Chan: The Little Girl at the Window".

The book recalls how, shortly before World War II, she was suspended from the first grade in her local public school for being too much of a dreamer. She found her way into a progressive school run by a man with an instinctive understanding of how children and their curiosities can grow.

"Totto-Chan" became a record bestseller, with sales now above six million, and Miss Kuroyanagi attributes its remarkable success not only to her celebrity status but to a widespread feeling that "There is something terribly wrong with education in Japan today."

Japanese education produced a high level of academic achievement, she commented. "But it does not nurture individuals, people who do original work," she continued, "and because teachers cannot afford to take time to help the many children who are unable to keep up, they fall further and further behind. In the process, they're scarred for life.

Much of the creativity problem is rooted in the examination system, which to a large extent is a measure not so much of student's intrinsic ability as it is a test of his willingness to conform and memorize.

**When a company hires someone who has made it to a top university, it can be assured he will be willing to work long hours, remember large amounts of information and, above all, accept the goals of the organization.** "Qualities valued by industry such as hard work, consistency, durability and loyalty are fostered in the schools," observed Nabuo Shimahara, a Japanese scholar at Rutgers University.

This system served Japan well during a period when its economic growth was achieved primarily by taking ideas generated in the United States and elsewhere and doing a better job of turning them into practical products.

A growing number of corporate leaders, educators, and others, however, wonder whether these qualities will continue to be adequate now that Japan may have to start generating ideas of its own.

Mr. Ibuka of Sony said in an interview that his company could not "do very interesting work" if it employed "only people who have graduated from the right universities". He said it was difficult to try to develop special talent or creativity at any stage in the Japanese system.

Many teachers share such concerns. "Our children are not creative enough," said Tomiko Yusa, who teaches at the Uchikoshi Junior High School in Hachioji. "There may be 36 ways to solve a math problem, but we don't have time to let them see more than one. So we produce children who can solve every problem with one method."[67]

## E. The Continuing Education of the Japanese Manager

Finally, in Japan "human capital" is developed in the company. As the company molds an individual, the Japanese model emphasizes mental well-roundedness rather than intellectual "tunneling". If the Japanese companies get a self-disciplined manager, they then turn that manager into a kind of business "Renaissance Man". As the U.S. executive is specializing, the Japanese manager is generalizing. Alan Cox, a Chicago-based management consultant believes that the Japanese company becomes an educational institution itself, and that is probably the case. He maintains that:

### Quote G-3

American business executives are quite narrow intellectually. Though not limited in intelligence, they tend to have tunnel vision because they spend up to 80 hours a week focusing on their specialized job in the corporation. They are committed to doing practical things, not playing with ideas. You don't find them reading novels or plays; their reading tends to be technical.

A lot of enormously bright executives do run around corporations with fantastic ideas, but they're not always heard, despite the fact that in the current rapidly changing environment firms must quickly come up with ideas that translate into new products.

Another, and related shortcoming of corporations is their failure to develop people who are generalists. Less than 40 percent of all executives say that their firms succeed at developing their young comers for general management positions. People in corporations become better in their specific field, but they do not broaden out.

Another example of corporate aversion to generalists is that, in hiring people, many firms don't look favorably on graduates of liberal arts colleges. Companies used to be interested in history and literature majors, but less so now. Executives prefer to hire someone with a business degree from a state university.

In contrast to American businessmen, Japanese executives are comfortable with ideas. When a new idea comes up in a Japanese corporation, it gets debated. The Japanese love to sit around and drink lots of tea and do more talking. The top executives in Japan are much more active mentally than their American counterparts. The Japanese insist on strenuously debating an issue before making a decision and good ideas do not really come of age unless they are debated.

American executives do not play with ideas much, they are often out of touch with society. They concentrate their attention on advanced financial gymnastics, focusing totally on short-term profits without worrying enough about what the consumer wants. The often poor quality of products and services reflects this.[68]

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## SECTION VI

## Related Factors Impacting Productivity

### A U.S./Japan Comparison

A. Investment of Capital Goods
B. Trends in Research and Development
C. Governments Interaction in the Private Sector
D. Consumption Patterns and Labor Productivity

### Section VI A ● Investment in Capital Goods

A U.S./Japan Comparison

### Other Factors Impacting Productivity

A. Investment in capital goods

1. What is the importance of capital equipment in calculating productivity performance?

2. What is the link between debt vs. equity financing when it comes to management planning?

3. Why does Japan have a better record of plowing back profits into improved capital goods?

### A. Why Investment in Capital Equipment Is Important in Productivity Gains

NKK Steel, Japan's second largest steel corporation cost 3 billion dollars to build. The new plant tripled the steel productivity of each worker by replacing 30-year old equipment in 1977. Some steel firms in America are functioning with equipment put into place in the 1930s. There are still some steel rolling plants in the U.S powered by steam. In 1974, Mazda Corporation was producing 740,000 cars per year with 37,000 workers. By 1981, it was making over 1 million cars with 27,000 workers. Why the gains in productivity?

Eighty percent (80%) of Mazda's new money goes to new equipment or new products. Interestingly, of that, 20% goes for better pollution equipment because Japanese air pollution standards are far more stringent than those in the U.S [69]

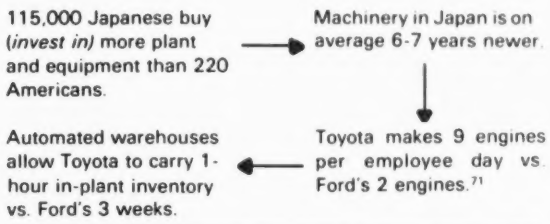
Jodi Arai, a Japanese expert on productivity living in the U.S. explains:

**Quote H-3**

"American companies often have a hard time raising the capital to plow back to improve the equipment. Japanese firms don't have that problem. They plow back their profits into the company, and there is more money to borrow. The Japanese family saves over 20% of its disposable income to help companies borrow money as debt. This financing has been the most prevalent method of raising expansion capital. Many Japanese companies plow back profits to buy new equipment to lower the average age of machinery in all major industries to 7 years as compared to 12 years in the U.S."[70]

The link between investment in new plant and equipment and productivity gains, U.S. vs. Japan, was put clearly in 1979 by the U.S. Chamber of Commerce:

**Chart I-3**


115,000 Japanese buy (invest in) more plant and equipment than 220 Americans.
Machinery in Japan is on average 6-7 years newer.
Toyota makes 9 engines per employee day vs. Ford's 2 engines.[71]
Automated warehouses allow Toyota to carry 1-hour in-plant inventory vs. Ford's 3 weeks.

According to the Chamber's thinking, the conclusion is obvious. Improved capital goods means a more efficient production process. Senator Lloyd Bensten of Texas explained that our problem with competing with Japan is as "simple as two able workers, one with a power say, one with a hand saw... which do you think will turn out more work?"[72]

In his lucid analysis "What Ails American Industry" James Fallows compares the "human element", or worker and management incentives to be productive with the importance of up-to-date capital equipment in prioritizing why we are falling behind Japan. His conclusion:

**Quote J-3**

> Yes, it may make a difference that Japanese workers do calisthenics at the factory while singing the company song, or that some American workers detest their tasks enough to wallop engine blocks with their wrenches, as I saw them do at one GM plant. The most productive American auto plants are those that have paid the most attention to fuzzing the class lines between management and labor. **But when it comes to making steel, a good attitude is not as important as a basic-oxygen furnace. On the auto assembly line, no amount of team spirit will make a door fit more closely than its designed tolerance.** When Japanese steel productivity soared during the 1970s, it could have been because workers and managers felt a personal commitment to the economic welfare of their nation. **I'd bet it had more to do with the dozens of new mills with continuous casters and electric furnaces.**[73]

Fallows follows up his conclusion with a case example designed to illustrate that quality superiority was not the result of a "superior Japanese worker", but a superior commitment of management to the kind of **process innovations** that we discussed earlier in Section III. He points out that:

**Quote K-3**

> Hewlett-Packard, a major computer company, shook up the semiconductor industry when it told **Electronics** magazine that the chips it bought from Japanese suppliers had a defect rate one-tenth that of American made chips. Was it the workmanship? Maybe. **But more likely the difference is higher Japanese investment in automated assembly equipment.** *(The Americans send more of the chips to Hong Kong and Malaysia to have the final steps done by hand, while the Japanese spend more on automated planes.)*[74]

In this case, the U.S. seeks cost advantages by seeking the low-wage labor markets in Asia. The Japanese seek cost advantage by building better capital equipment at home!

**B. What Are the Sources of Our Decreased Capacity to Reinvest?**

Our total GNP purchases for investment compete with three other purchase areas; consumer purchases, government purchases, and net exports. In the U.S., the investment goods *(capital goods)* purchase of the GNP has averaged about 16% of the last few years. That is one-half the share that the Japanese average (33% of their GNP). The reasons for this probably fall into three catagories:

1. The Japanese role of personal savings is 4-5 times that of the U.S.
2. The mode of finance - debt vs. equity - *(we have discussed this before).*
3. Management perspectives - *(see IV E for a discussion).*

As to the Japanese rate of savings, two factors among many others come into play. A **21-24% savings** rate could be attributed to a low tax on interest (1-2% for the 1st 50,000). The incentive is to save. At the same time the Japanese do not allow deductions for interest paid for borrowers. The tax message to households is clear. There is no advantage to borrow, no penalty to save. Secondly, the fact that the Japanese family must pay 80% down in cash on a home. *(Homes are very expensive in Japan)* may be another reason

to save. In the U.S., the tax system sends a reverse message. With interest on savings taxed as income and with interest paid by borrower tax deductible, the tax message is clear. Borrow, don't save! Economist Milton Friedman, when asked why our savings rate in this country is falling stated:

**Quote L-3**

> Primarily because inflation, particularly in the price of owned homes, has driven a wedge between the increase in wealth as perceived by consumers and the funds available for financing business-capital formation. To the consumer, capital gains realized from the sale of a home, even if reinvested in another home, add just as much wealth as those items that the statisticians label personal savings. However, such capital gains are not included in measured savings and are not available to finance business-capital formation. If inflation is ended and the burden of taxation reduced, personal savings as measured by statisticians will rise. Even more important, it will be available for financing capital formation. [75]

Friedman's comments came in 1981 before Reagan's anti-inflation strategy which was in part designed to increase investment by lowering taxes on capital gains. By 1983 after 2½ years, our savings rate had fallen from 5 to 3%!

Secondly, the capital formation question comes down to modes - private sector financing that we have discussed in Section IV F. Equity vs. debt financing not only dictate management planning *(short vs. long range)* but also impact the reinvestment issue. James Fallows explains:

**Quote M-3**

> Even if U.S. companies have the capital, their decision to invest is often based on whether a project can be proved profitable in the short run. In Japan, companies build on huge debts relatively little equity capital are more beholden to banks than shareholders. So the pressure to earn quick profits and earn high dividends is less. Instead Japanese companies are encouraged to invest in long-range yields on capital.
>
> The central difference between debt and equity at least for mature businessess, is what the lenders can ask. If a bank gives a loan, what it wants is to have the money repaid. An equity share entitles the owner to something else. He has the right to demand that the management maximizes profit now.
>
> Japanese steel makers, which are financed mostly by bank debt, don't have to worry about stock market expectations. The stockholder-owned U.S. makers were expected by Wall Street to present neat quarter-to-quarter increases to earners. It's an unhappy fact that sometimes what is best for a company or an industry, for example, a long period of foregone earnings while profits are plowed back into new facilities, is not always what keeps the stockholders happy. [76]

In comparing Japan and the U.S., one fact of business escapes many observers. In the period 1974-1979, pre-tax profit on U.S manufacturing was 8-6% compared with Japan's rate of only 1.8%.[77] It is expected that the bulk of reinvestment into new plant and equipment for U.S. business must come from **retained earnings** *(that profit retained by the company)*. Competing with retained earnings are stock investors and stock brokerages expecting a dividend or profit share for the trust they have shown as an equity holder. Managers must decide to improve equipment and long-range productivity or keep the investors happy. Japanese managers are not faced with those no-win choices. In fact, the banks **expect** earnings to be plowed back. The banks will be in trouble **only** if the company fails to survive the **long run,** the length of the contract. The steel industry is illustrative; in 1969-1977 U.S. steel companies were being destroyed in the competitive world markets by Japanese steel made of higher quality and sold at at lower price. U.S. steel companies were still earning a profit four times higher than Japanese steel firms.[78] **Profits** in this case hid from investors and the American public the fact that U.S steel firms were much less productive and competitive. The result by 1980 was the spectacle of declining capacity, massive unemployment and the realization the U.S. was beaten. Some American businessmen recite a version of Vince Lombardi's old line, "Profits aren't everything, they are the **only thing**". These are the same businessmen feeling pressure in world markets and are the ones looking for excuses rather than facts to explain recent Japanese success.

## Section VI B ● Trends in Research and Development - Japan vs. U.S.

**Goals:**

To be able to respond to the following:

1. What are the steps necessary to become a technology innovator?
2. Is Japan changing its image from "borrower" to "innovator"? How and why? What is the impact on the U.S.?
3. The U.S. - what does it need to do to become a **"process innovator"** like Japan?

### Trends in Research and Development

**Exploring Japan's Record as Technological "Borrower" Rather Than "Innovator".**

There are two dominant views concerning the caliber of Japan's technology:

1. They are now challenging the U.S.
2. Except in production engineering *(process innovation... see Section III)*, they are more dependent than ever on the West.

There may be some truth to both of these views. Can the Japanese carry themselves borrowing foreign ideas and turning them into good, inexpensive desirable products? Will licensors in the U.S. or Europe run out of patents or refuse to sell them to Japan out of nationalistic self-interest cutting short Japan's use of new ideas?

However, Japan is making strides toward balancing themselves as a technology importer of the West with a growing presence in the field of technology exports.

**Chart N-3**

| | |
|---|---|
| 1960- Imported | 4.0x the value of technology it exported |
| 1975- Imported | 4.4x the value of technology it exported |
| 1981- Exported | 2.8x the value of technology it imported |

*(Japan still buys its technology in the West. Eighty percent from the U.S., Britain, and Germany. Japan exports technology mostly to 3rd world countries.)*[79]

The Japanese have an outstanding record when it comes to productivity, process innovations, and technologies applied to the workplace in which man and machine come together. Why? Because the workforce is technologically oriented! Workers see no threat from machines making their labor more productive in the manufacturing process. Although the U.S. and Japan spend roughly the same percent of GNP (2.4%) on R/D, in Japan it is funded somewhat differently than it is in the West. The British journal **The Economist,** explores these differences.

**Quote O-3**

Industry in Japan accounts for two-thirds of the research done in the country's laboratories *(as it does in other countries)* but only in Japan does the private sector pay for all its own R and D. Industry in America gets 35% of its research money from the government— in Britain 30%. Research projects in Japanese companies, coming as they do purely out of profits, are aimed directly at the marketplace and are expected to pay their way quickly.

The knack of being able to churn out new products with bewildering speed stems in part from the ease with which technical information is disseminated within Japanese companies. With their "bottom-up" organization, ideas move in Japanese firms from junior engineers to project

managers and on to boardroom directors to become corporate policy. The whole process is helped smoothly along in big blue-chip organizations by the lifetime employment system, where nobody is frightened of losing his job and each gets the credit he is due.[80]

---

Japan's technological strategy is subtly different in the development stages. Walk around any hi-tech firm in Japan and you see mostly foreign equipment. Most of the exotic electric beam machines needed to print Japan's famous "micro-chips" (VLSI) are supplied by Itek Corporation in the U.S. When developing a new product Japan tends to buy much of the equipment for making and testing it then, zero in on the engineering needed to **produce** it better and cheaper *(process innovation, learning curves.)* This strategy has helped the Japanese in VLSI chips, optical fibre links, advanced ceramics and robotics.[80] It insures the Japanese that when they enter the market it is with the most competitive product *(quality, price).* That is Productivity!

However, there is considerable evidence that the Japanese will begin to explore the path of pioneering new technology... why after such success in process innovation? There are four possible reasons:

1. **Pride:** To be called mere imitators rankles the Japanese.
2. **Gratitude:** The West has been so generous with its technology over the years that the Japanese want to return some of their contributions with their own ideas.
3. **Self-Interest:** The West's rate of innovation is slowing. The West is running out of ideas for the Japanese to perfect.
4. **Fear:** After years of trade friction Europe and the U.S. may start to exlude Japan.[81]

If Japan is to become a research innovator, there are some changes it will have to make. Analysts suggest:

**Quote P-3**

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First, Japan must do a good deal more tinkering in the laboratory. There is nothing magical about basic research. Scientists working on the frontiers of knowledge usually have a little more to guide them than a few theoretical clues and a gleam in the eye. The job is 99% perspiration, 1% inspiration.

Japan used to lavish princely sums on it's research scientists. Over 30% of the country's total R and D expenditure went to basic researchers in the mid-1960s. A decade later they were receiving less than 20% of Japan's expenditure on R and D. Today they get only 13%. That could change if the government is serious about the Creative Scientific and Technological Promotion Program it launched two years ago. This aims to inject public money *($45 million has been promised)* into specific areas of basic research where Japanese scientists have the chance— as in advanced materials, crystallography, and superfine particles.

There are two further things that Japan needs to do if it is to unleash its full creative power. One is to revitalize its universities, which have become mere mass-producers of diligent but dull engineers and competent administrators. Western innovation owes much to the unfettered thinking that is done around the campuses. The seeds of university science become the tools of technology for tomorrow. Universities in Europe and America tend to be long-range research centers rather than mere teaching factories.

The other thing Japan needs to do is open its doors more to foreign researchers. America's technological supremacy only came after absorbing Europe's best scientific talent as it fled from Fascism or, later, brain-drained from a weary Britain. Japan would be far better off scouring the world with pocketfuls of cash, not for enticing Western firms to part with their patents, but as transfer fees to lure away their top scientists.[82]

---

**What Does the U.S. Need to Do to Become a Process Innovator Like Japan?**

What about the United States? As mentioned in Section III, Lester Thurow does not see a correlation between a decline in R/D as a percent of GNP and our decline in productivity. Japan needs to commit itself to becoming less dependent on the West for innovative technological research. Thurow and many others argue that the U.S. must become more committed to applying its dollars and scientists to process innovations, learning how to make new products better. *(See Section III)* Intel Corporation, a recent success story in micro-electronics follows the example of Texas Instruments, *(the process innovator of the calculator)*as a pace-setter in process innovation.James Fallows explains how Intel did it. As you read, isolate the characteristics that make Intel such a process innovation pacesetter and you will discover that it has much in common with the "Japanese Model".

## Quote Q-3

Several of Intel's innovations have pushed back the frontier of size, cost, and complexity that had previously limited computer applications. The company has developed "memory" chips with steadily larger capacities. It produced the "microprocessor", the first product with all central computing circuits on one chip, and a "microcomputer", which combined this processor with several other circuits. According to Andrew Grove, its next giant step will be to steer the industry past another potential limit, the supply of people trained to program computers. If the computer business kept growing at its current rate, he says, by 1990 it would take one million programmers to provide computers with "software", the machine-language instructions for carrying out their work. This is far more programmers than the nation is going to produce. Intel is now moving toward building the software—the programs themselves—into the chips. As computers become cheaper and the demand for programming soars, it will make economic sense to have computers designed for certain purposes—accounting, word-processing—which require no programming at all. A program can be designed once, etched in silicon, and then sold by the millions.

By continuing to invest more money than the competition does in research and development, and by attracting the kinds of people who can take advantage of that support, Intel has so far had the best of all worlds. Being first to the market with each new product, it can charge a premium price during the year or two it takes for competitors to catch up. All the while, its production costs are falling, as it moves down the "learning curve" that cuts the cost of each item as more are made. "We've developed the markets that we've seen," says Gordon Moore, a mild-mannered, bespectacled man in his early fifties. "Because we're there first, we're able to charge more, and at any given time, we've had more experience than our competitors and can bring costs down." "Profit is our lifeblood," says Andrew Grove. "The idea that profit is necessary to us is broadly recognized. Thousands of people make daily individual decisions with that in mind." Twelve years' worth of profits have been plowed back into the company. Last year, Intel put $67 million into research and development and $97 million into capital improvements. It has never paid a cent in dividends.

It does not take long for a visitor to Intel, or to other companies in the area, to sense an atmosphere different from that of the "mature manufacturing industries. These companies seem more flexible, less concerned with the normal trappings of rank. Intel divides its leadership among Noyce, Grove, and Moore. Gordon Moore has the modest bearing of a junior high school principal, yet he is the chief executive officer, and he holds 1.5 million shares of Intel, worth $105 million at current prices. There is no suite of executive offices at Intel; each of the three founders has a corner in one of the open-floor layouts, each in different building. Indeed, none of the Silicon Valley executives I saw in six companies seemed to have an "office"; walled off from the main room by a couple of shoulder-high partitions, each was identical to that of a copy editor at a magazine where I once worked.

Nearly every time I heard an employee of Intel or one of the other companies refer to the firm, it was "we". At Intel, employees have put $60 million of their own money into the company through a special stock-purchase plan. There are virtually no unions in this industry. There are complaints and problems; work in the wafer-fabrication plants is repetitive and tedious; one of the chip companies is known for ruthlessly dismissing people whenever the market takes a dip. Still, there is the air of cooperation that comes from being on a winning team".[83]

---

What are those characteristics as we see them in the Intel case example?

1. A learning atmosphere that studies the market and technology's application to it.
2. Plowing back profits into R/D, better equipment, to maintain production advantage.
3. Sharp attention to learning curves.
4. A management and a workforce less interested in "posturing for position", or short-term wage, or salary benefits than long-term growth **with the company.**
5. An unstratified workplace; few class lines.
6. Team atmosphere; "we".
7. No union.

The U.S. can become a process innovator, yet Intel is a pace-setter. What about auto, steel, lumber and mining firms that are not "pioneer" companies? The point is that it may be less "natural" to apply these characteristics, but it should not be impossible! Simply, productivity gains demand it!

## Section VI C ● Government - Private Sector Relationship

### Goals:

1. What are the ways that government can accelerate or retard productivity gains?
2. Is the cooperative image that the Japanese government has in relation to business *(Japan, Inc.)*an accurate one? Conversely, is the strict adversarial that the U.S. government has an accurate one?

### What Are the Ways Government Can Accelerate or Retard Productivity Gains?

#### A. Tolerating Inflation

No doubt the government has been a drag on business's flexibility and its capital resources. Most of all, it has done so by building inflation into the economy. For fifteen years, Republicans and Democrats have stood united on such practices as cost-plus contracting, automatic cost-of-living increases in government spending, big deficits to fight recession and cheap dollars to pay for oil. Individually, some of these make sense. Together, they advance the ratchet of inflation notch by notch. With each new notch in the "underlying" inflation rate— from 4 percent to 6, from 6 percent to 8— another whole class of investments become unprofitable, and another share of the nation's wealth is drawn toward Swiss francs, the gold market, or buying today the products that might cost more tomorrow. Inflation, for example, re-allocates investment dollars that could have been potentially used as industrial capital toward a sector like real estate, that *(though profitable during high inflation periods)* does not detract from the nation's productivity standing. The inflation logic tells the consumer— don't save, don't invest, don't look at the long-term— consume now, speculate now or inflation will price you out of the market.

#### B. Government Regulation

Auto manufacturers claim for example, that they spend billions *(GM 1.9 million alone)* a year to comply with government regulations. They do this by having to re-tool for new safety equipment and emissions controls, by reducing air and water pollution from plants and by filling out innumerable forms. Two esteemed economists have varying views on whether or not the government is responsible for our productivity decline. Paul Samuelson says government has been made a target by private sector managers not willing to face their own responsibilities. Milton Friedman argues government is the chief source of the productivity decline, and in ways we may not even be aware of. When the editors of **Newsweek** magazine asked them to comment on the question— to what extent are government regulations specifically responsible for productivity decline— their responses were:

#### Quote R-3

**Samuelson:** Safety regulations and pollution controls do lower productivity as conventionally reported... but longer lives and purer air are part of what an affluent society will rationally want. There has been no quantum step-up in government regulations in the 1970s, compared with the 1960s, so **it's an alibi to blame government regulations for most of the changed productivity outlook.** The truth is this: America is a slow-investing economy and our support for technological and scientific innovation has been declining. Capital and knowledge are the prime sources of productivity growth— not Washington hot air about "supply-side economics".

**Friedman:** Excessive regulations have imposed a heavy hidden tax burden (that) discourages investment and enterprise and is ultimately paid by the consumer. **Poorly designed regulations have distorted investment so that more and more capital formation neither increases productive capacity nor achieves the stated objectives of regulations.** The sharp jump in the price of oil in 1973-74 would have significantly reduced our productive capacity under the best of circumstances, but the adverse effects of the jump were greatly increased by the counterproductive

policies of the American government, which discouraged the production of energy and encouraged consumption.[84]

James Fallows reports:

**Quote S-3**

While they don't always come out and say so, many industrialists seem to feel that the government does not give a damn whether companies live or die. Officials at each of the three major auto firms mentioned with unmistakable malice, that Joan Claybrook, Carter's head of the National Highway Traffic Safety Agency and the main day-to-day regulator of their industry, drives a Volvo. "Can you imagine her counterpart in Japan driving a Chevy?" one auto man asked, rising from behind his desk. *(Joan Claybrook points out that when she bought the car in 1969, it had a shoulder-harness seat belt, head restraints, and other safety features).* The regulations require such items as re-tooling for new safety equipment and emissions controls, reducing air and water pollution from its plants, and filling out American Iron and Steel.[85]

Regulations also create something else... lawyers. There are an estimated 35,000 lawyers involved in regulation, most in Washington, D.C. Says Robert Reich, an official in the Federal Trade Commission during the Carter Administration:

**Quote T-3**

"There are 35,000 lawyers involved in regulation, most of them here in D.C." says Robert Reich, an official of the Federal Trade Commission. "They have an economic stake in prolonging conflict between business and government, and shaping it into as stark, square terms as they can. Most of the regulatory agencies have a lot of lawyers who expect eventually to go to the other side. Their opportunities for advancement are enhanced if they are seen as tough and aggressive in playing this game."[86]

**Japan, Inc.**

Whether as a promoter of inflation, a reckless regulator or a greedy taxer, the private sector has used the productivity issue to point to the federal government to say..."Our government is an adversary, Japan's government is a friend." The claim that "Japan, Inc.", a government-business partnership, is the chief cause of Japan's success in the world market may have some truth to it. As mentioned in Section III, Japan's government has had a history of targeting "sunrise industries" *(an Intel, for example).* Japan's Ministry of Trade has presided over the negotiation of favored tariff policies to promote internal growth. They have subsidized private banks in an effort to get capital to the right companies. *(In the late 1950s however, MITI, Japan's Ministry of Trade suggested to Japan auto makers that they saw no future in world export markets for their products.)* Japan's private sector is fond of that story to tell Americans that MITI is not always listened to. Yet, the case of the Mitsubishi Ship Works points out something that Japan's government has done to stimulate what Lester Thurow mentions in Section III - "creative disinvestment".

**Quote U-3**

In 1975, Mitsubishi's Hiroshima ship yard used 11,000 tons of steel a month, now it uses 2,000 tons. The government decided as a matter of national policy Japan must cut its ship building capacity and turn to something else. In this case, drilling rigs for oil exploration. Mitsubishi's ship yard cut its work force by 1800 workers but no one was fired or laid off. Some workers were transferred to make drilling rigs or loaned to other companies in need of labor.[87]

Japan's government is continually in the practice of identifying world market cycles, and assisting their business in adjusting. This is a mainstream example of both "creative disinvestment" and "Japan, Inc".

Whether the U.S. government will respond with their own "Industrial Policy" is a speculative and highly "politicized" issue. We may not know until the latter part of this decade.

## Section VI D ● Consumption Patterns and Labor Productivity

A U.S./Japan Comparison

**Goals:**

1. How has America's shift to services impacted productivity performance?

2. What is the U.S./Japan performance when it comes to low productivity white-collar/high productivity blue-collar occupation balance?

### How Has America's Shift to Services Impacted Productivity?

In Section III, we explored the "mix of products" consumed by Americans. Over the last three decades that "mix" emphasized low productivity areas like services. Many think that the decline of productivity has had a great deal to do with what people actually do for a living. Not so long ago, American workers spent about 70 out every 100 hours actually producing tangible products. But today the work force devotes only 40 hours to turning out goods; the balance goes to pushing paper— filling out forms, processing payrolls, preparing reports and the like.

The trouble is that statisticians haven't figured out how to measure that kind of work with any accuracy. "We don't really know what clerks, financial people or managers do - how well they do it against some standard or in comparison with their peers", says Andrew S. Grove, chief operating officer at Intel Corp. "And if we can't measure it, how can we hope to make it more productive?"[88]

Lester Thurow argues that while the blue-collar workers in manufacturing are becoming more productive all the time, it is the growing number of white-collar service workers, or managers in manufacturing that are pulling our productivity ratings down.

**Quote V-3**

> Who works for a firm that has not added some new layers of management in the last ten years? Who works for a firm that does not generate huge amounts of paper reports— most of which do not get read, much less acted upon? Who works for a firm that has fired secretaries and insisted that managers do their own typing since the introduction of word processors?[88]
>
> Thurow points out that in the period 1977-1980 the lower output per man-hour among the ranks of 5 million new white-collar workers, is creating a new social class relationship which negatively impacts gains in productivity.

**Quote W-3**

> America is becoming a white-collar bureaucratic nation partly because our education system is supplying vast numbers of new workers who are trained to be bureaucrats. And as is now the fashion in supply-side economics, supply creates its own demand.
>
> But there is also a class issue. When a manager raises factory productivity and fires some blue-collar workers, he is firing someone else— someone with a different education and background. When a manager raises office productivity and fires professional and managerial workers, he is firing someone just like himself— someone with the same education and background.[89]

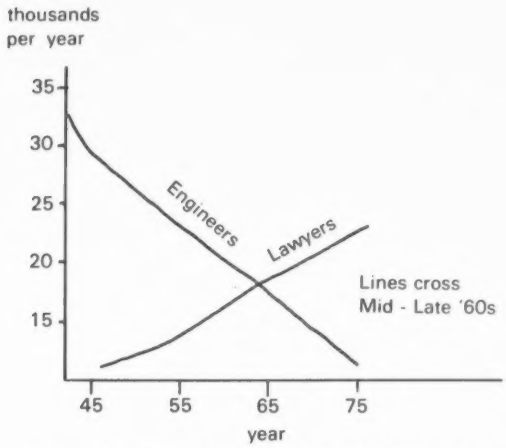
Robert Reich, himself a lawyer, agrees. He calls these new bureaucrats "**paper entrepreneurs**". His theory is that economic life has yielded more and more of its prizes to those who can work the legal and financial angles or can guess right in speculation, rather than those who work at improving a product. Reich continues:

**Quote X-3**

"Paper entrepreneurs" trained in law, finance, and accountancy, manipulate complex systems of rules and number, Reich has written. "They innovate by using the system in novel ways: establishing joint ventures, consortiums, holding companies, mutual funds; finding companies to acquire, "white knights" to be acquired, commodity futures to invest in, tax shelters to hide in; engaging in proxy fights, tender splits, spinoffs, divestitures; buying and selling notes, bonds, convertible debentures, sinking-fund debentures; obtaining government subsidies, loan guarantees, tax breaks, contracts, licenses, quotas, price supports, bailouts; going probate, going pubic, going bankrupt."[91]

One of the classic ways to compare "productive vs. unproductive" occupations is to compare the amount of engineers produced by a society vs. the amount of lawyers. Lawyers, are an essential part of an adversary system, but they do not improve our material standard of living.Graph Y-3 demonstrates that the "mix" of the two professions changed in the U.S. about 1965.

**Graph Y-3**

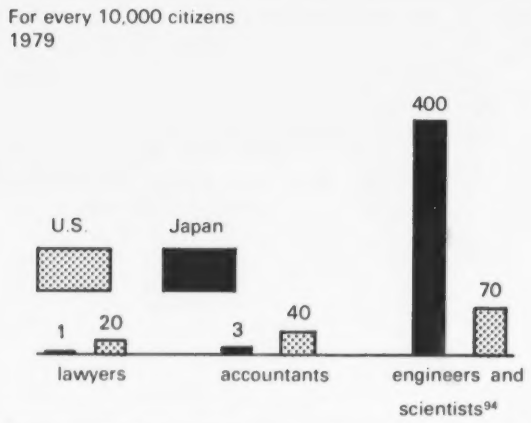



"Where have all the engineers gone? Probably to law school!"[93]

**2. What About a U.S./Japan Comparison in This Area?**

The tendencies impacting productivity are made even more uncomfortable by comparing the trend with that of Japan. For every 10,000 citizens Graph Z-3 shows the occupational priorities.

**Graph Z-3**




The extent to which this reflects the market stage of development we are in or a cultural bias is really not clear. In Section III, our consumption of high productivity manufactured products began to fall by the mid-1960s in favor of services. With it came more white-collar employment. Japan finds only 50% of its workforce in services while 68% in U.S. are involved in this sector's occupations. As the Japanese move toward a stage of consumption in which manufactured durables *(autos, T.V.s, radios, etc.)* begin to drop, will it also begin to build a bureaucratic white-collar workforce? Only the future will decide.

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